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Article

Demographic Determinants of Satisfaction with Technology-Enabled Employee Benefits in Higher Education Institutions: An Empirical ChiSquare Analysis

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Abstract: This research undertaking analyzes the socio-technical implications of the digital transformation in administrative areas of higher learning institutions. The methodology that the study will use is a quantitative cross-sectional approach (N = 500) which evaluates the degree to which demographic features influence the levels of employee contentment with automated administrative systems. Highly significant associations ($p < .001$) are found between technology acceptance and the age, gender, marital status, and existing institutional culture of the employees in Pearson Chi-square tests. Findings imply that without an equal adaptation of information technology, techno stress will increase and certain groups of people will be unequally marginalized. University decision-makers ought to avoid general digital requirements to promote the context-based, user-focused training programmes and creation of clear digital work-life boundaries as a way of promoting their operational efficacy.

Keywords: Digital Transformation, Higher Education institutions (HEIs), Technology Acceptance Model (TAM), Technostress, Organizational Behavior, Administrative Efficiency.

1. Introduction

Background

Digital technologies have been used in Higher Education Institutions (HEIs), and this has changed the face of the academic world globally. This digital transformation, which was hastened at first by the need to conduct learning remotely, has quickly spread into the very administrative model of colleges and universities. Leaving behind the old style manual systems, new educational institutions are more dependent on the automated digital systems. The transition becomes heavily important in managing the complex organizational needs so that organizations are able to remain competitive, deft and able to provide quality educational services in the data driven age.

Although the digital pedagogy and the student learning outcomes are heavily researched, the administrative background behind HEIs is often under-researched. Specifically the administrative functions of student attendance registration, payroll generation and human resource management are important to the sustainability of institutions. Moving such operations to paper-based ledgers to centralized digital databases will have a large impact on improving the transparency and workflow within the organization. Therefore, it is critical to comprehend how the administrative personnel evolve around these advanced management systems to achieve the optimal strategic sphere of institutional digitalization.

User acceptance and psychological readiness is a critical aspect of the successful implementation of these digital systems. The Technology Acceptance Model (TAM) is based on the fact that the readiness of the employee to embrace a new technology is dependent on their perception of its ease of use and usefulness. Nonetheless, the fast implementation of automated systems often causes the so-called technostress, which is a psychological phenomenon that produces anxiety, confusion of roles, and cognitive congestion. The optimization of the advantages of

digitalization in relation to the psychological health of the personnel represents one of the first challenges of the modern educational management.

More so, age, gender, and educational background, are demographic factors that are complex agents in this digital transition. Conventional expectations indicate that older workers can be more obstinate to technological changes; nevertheless, recent statistical studies are giving opposing accounts. The online gap of institutional working environments should be scrutinized attentively, in localised fashion. The interaction of the particular demographic groups with new digital equipment will be crucial in planning fair training programs and make sure that technological progress is not, unintentionally, a way to make administrative staff feel like a relic.

Although the significance of digital administration has been acknowledged, a huge gap in empirical studies exists on the comparison of the effects of these systems before and after implementation. The majority of the modern literature does not contain localized and quantitative measurements of the immediate change in the perception of the employees prior to and after the implementation of digital tools. Additionally, there is clear necessity to cross-tabulate such transitional impacts with demographic variables in order to come up with specific organisational approaches towards certain institutional settings, like engineering and degree colleges.

This study is **necessitated** by the fact that there is a high rate of digitalisation of higher education administration. The current body of research is quite intense on the topics of student learning outcomes and online pedagogy. Nevertheless, the particular administrative roles in these educational organizations are not well studied. The rapid change of automated management systems usually leads to technostress of the staff. Hence, there is an immediate need to understand the impact of demographic variables on technology acceptance. This study can be used to offer critical empirical evidence to facilitate inclusive policies in academic institutions. Such regional approaches will eventually guarantee optimal performance and protect the welfare of employees.

To fill this research gap, this paper will offer a rigorous quantitative research on the topic of digital transformation in the administration of the HEI, addressing the below objectives and Hypothesis:

Objective 1: To analyze the psychological factors of employees toward the use of technology in the organization.

H_{01}: There is no significant relationship between psychological factors and employee perception toward technology usage.

H_{11}: There is a significant relationship between psychological factors and employee perception toward technology usage.

Objective 2: To examine the relationship between Age and Satisfaction level toward digital technology.

H_{02} There is no significant association between Age and Satisfaction level toward digital technology.

H_{12} There is a significant association between Age and Satisfaction level toward digital technology.

Objective 3: To analyze the association between Gender and Satisfaction level toward digital technology.

H03 There is no significant association between Gender and Satisfaction level toward digital technology.

H13 There is a significant association between Gender and Satisfaction level toward digital technology.

With the accomplishment of these objectives and hypotehsis, this study gives practical, evidence-based information to academic policy-makers. The rest of the paper will be organised as follows: Section 2, synthesised the literature already available on the area of HEI digitalisation and technostress. Section 3 describes the statistical models and quantitative methodology used. Section 4 shows the empirical findings based on statistical analysis. Lastly, in Section 5 and 6, the adopted findings are addressed in terms of implications to institutions and strategic advice that could be given against these institutions as the digital transition unfolds.

Scope

The Pearson chi-square test of independence has a definite analytical role in quantitative research methods. This statistical instrument is used to test whether there is any significant association between two different categorical variables. This test is applied in the present research to investigate the correlation between demographic variables and technological satisfaction. It is a good measure of the significance of the observed employee response distributions when compared to the expected mathematical probabilities.

2. Literature Review

2.1. Theoretical Framework: The Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) can serve as the main theoretical framework to explain the digital adoption in the countries of learning. Initially developed with the aim to predict user acceptance, TAM postulates that, perceived usefulness and perceived ease of use are the key factors that determine the behavioral intention of an individual to utilize new systems (Newcastle University, 2024). These psychological constructs cannot be disregarded in the context of the milieu of higher education administration; when the employees begin to see a digital tool as an instrument boosting job performance without causing excessive cognitive load, their technological change resistance significantly subsides (Alharbi and Drew, 2014).

Recent upgrades of TAM have put emphasis on its relevance in the situations of evaluating institution communication and administrative software. The more the internal digital platforms are perceived positively by the employees of a university, the more likely it is that they will find the need to use this tool in their everyday workflow (Arafah and Hasyim, 2023). Furthermore, an assessment of faculty and staff satisfaction in terms of the TAM promotes practical outcomes in technical departments; the comprehensive introduction of digital management systems with extensive training eventually allows sustainable education technology systems established (Bove and Conklin, 2023; Al- Rahmi et al., 2022).

2.2. Online Revolution in HEI Management

The development of manual system into digital systems in Higher Education Institutions (HEIs) has been transformed into strategic necessity. Modern research proves that the digital transformation significantly promotes the efficiency of administration and organizational planning (Zhang, 2025). It is not solely a transition that has occurred due to technology but more of an organizational shift that has been changing the way universities handle internal information, student attendance, and human resources. The modern blend of artificial intelligence also creates unprecedented prospects of automating administrative practices, and, at the same time, infrastructural problems through which the institutions have to operate (Bhaskar, 2025).

These digital structures require effective evaluation of the digital maturity of the institution and development of strong digital leadership to be implemented effectively. The leaders have to work through the challenges of implementing new tools and preserving the staff preparedness and operation (Onan, 2024; Marks & Al-Ali (2022). This is explained by a full-fledged report by the European University Association (2024) who indicates that even though institutions all have shared efficiency goals by continued digitalization, their roadmaps to implementation vary widely across regions due to infrastructure. In turn, the key to effective digital change is the adaptive leadership and strategic frameworks.

2.3. Psychological Factors and Technostress

Despite the fact that digitalization simplifies the process of institutional functioning, it also creates serious psychological issues, including so-called technostress. Technostress becomes a reality once the employees develop anxiety, mental exhaustion, alongside the unclear role due to the speed with which innovations were integrated into practice. Empirical assessments in the recent past within the context of HEIs suggest that this phenomenon has a direct negative impact on the well-being of both academic and administrative employees, with this usually manifesting itself in the so-called techno-overload where digital systems are believed to create more, and not less, administrative work (Patra & Bansal, 2025; Diamante, 2025).

The constant necessity to acclimatize the employees to new digital space with no proper technical guidance only increases frustration among the employees. Although the adoption of innovations in human resources management is supposedly aimed at contributing to greater operational effectiveness, it tends to cause technostress when the interruptions of the system become a routine (Bencsik and Csinger, 2022). Technostress alleviation is therefore one of the current central organizational concerns. More rigorous interventions such as special training programmes, ergonomically designed interfaces, become inseparable to ensure the well-being of the employees and higher organisational performance in the digitised academic environment (Salanova et al., 2025; Kumar et al., 2024).

2.4. Demographic Impact in Adopting Technology

The effect of a demographical factor, particularly, age and gender on the adoption of technology is a complex question in higher education institution (HEI) research. The common stereotypes portray the traditional views so that

the aged workers are more resistant to the digital revolution than the younger workers. However, using the Technology Acceptance Model (TAM) in the recent studies show that the digital age-related digital divide is significantly reduced when perceived usefulness is clearly proved. Provided sufficient training, older employees often use digital tools with a high efficiency rate, due to the high level of institutional knowledge (Almulla, 2021).

Likewise, the issue of gender differences in technological satisfaction and utilisation should be under careful empirical study. Although earlier technological adoption research results were hinting at the presence of a gender divide in technological levels, current education models allege that digital technologies that are actively used in modern educational institutions are increasingly becoming gender-neutral regarding the adoption. The emphasis has also now shifted to the issues of institutional support rather than the limitation of population. A promise of fair access to digital literacy programmes will ensure that every employee regardless of his/her sex and age will be able to effectively use automated administrative systems (Bove & Conklin, 2023).

2.5. Comparative Effects: Before and After Digitalisation

A stringent analysis of the physical advantage of digital transformation requires a comparative study of the workflow undertaken by an administration prior to and following the implementation. Before the digitalisation era, universities administrations had invested a lot in manual record-keeping which was labour intensive, time-consuming, and prone to human errors. The activities involved keeping track of student attendance, leave management, and payroll generation required large-scale physical documentation, therefore, causing considerable delays in the institutional decision-making process, which resulted in a following lack of transparency in operations in general (Zhang, 2025).

After the implementation of digital management systems, the efficiency of the workflow and data accuracy are noted to improve significantly in HEIs. Automated systems provide real time tracking of the student academic progress and simplify the human resource processes that are complex. This online transformation does not only hasten normal and everyday administrative tasks but also institutional accountability. Replacing pen and paper ledgers with digital databases controlled centrally also allows institutions to experience unprecedented transparency in their governance, hence allowing staff to devote their time to more productive education (Marks & Al-Ali, 2022).

2.6. Determination of the Research Gap

Although the research on the digitalisation of HEIs is quite extensive, there is also a substantial knowledge gap that is related to the localised effects of technology on the benefits of administration and employees. Existing literature predominantly focuses on student-centered digital transformation and e-learning systems in higher education institutions, whereas limited empirical research examines the impact of digital administrative systems on employee satisfaction, technostress, and demographic variations among staff in engineering and degree colleges. The majority of the studies that survive are already biased towards e-learning output or student technological acceptance, which often leaves out the psychology and functioning of the academic and administrative personnel. It is immediately needed that quantitative research conducted directly compares pre- and post-digitisation perceptions and simultaneously cross tabulates the results with individual demographic variables, which will provide administration-wide, administration-localized strategies.

The past literature has extensively explored the digital transformation processes within a higher education setting in the world. Marks & Al-Ali (2022) state that institutional infrastructure strongly affects digital adoption. Their model shows that digital maturity and adaptive leadership enhance the efficiency of administration to a considerable extent. Additionally, Almulla (2021) use the Technology Acceptance Model in education. They determine that the attitude of usefulness and usability are significant predictors of user acceptance. Major success factors in technology integration are proper training and simplicity of the system. Nevertheless, there are also major challenges of rapid digital adoption that modern educational institutions continue to face. According to Patra & Bansal (2025), the ensuing technostress has adverse effects on the general well-being of employees. They cite that a fast-moving technological change leads to the overloading of academic staff.

The chosen studies are a solid basis for the contemporary educational technology adoption. However, there is a sharp and prominent research gap in the current scholarly literature. The majority of past studies concentrate on academic faculty or general organisational preparedness. Very limited research is done on the individual administrative personnel in engineering and degree colleges. Cross-tabulation of technology acceptance measures and localised individual demographic variables is also seldom done in existing literature. Individual ones, such as marital status and positions in particular departments, are highly ignored. The present research paper closes this gap by undertaking a

quantitative demographic study. It can gauge the particular socio-technical implications of localised institutional administrative employees in the present day.

2.7 Conceptual Framework

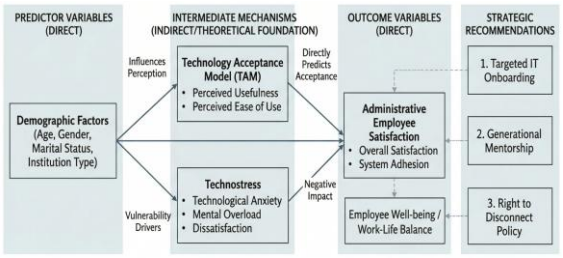

Figure 1: Conceptual Framework

3. Research Methodology

The research design employed in this study was quantitative, cross-sectional in order to determine as empirically as possible the adoption and perceived adoption of digital administrative systems in Higher Education Institutions (HEI). The selection of a descriptive and inferential quantitative methodology was related to the fact that it allows the objective measurement of psychological constructs and demographic relations at one moment. Through this systematic framework, the study goes beyond theoretical assumptions and provides statistical confirmation of the interaction process between different demographic groups with fine-grained technology applied within different collegiate environments.

The target group was the academic and administrative staff who are the active users of digital management systems in the regional HEIs. In order to obtain a comparative institutional outlook, both engineering and standard degree colleges were used in recruiting the respondents. The purposive sampling method has been used, whereby only those employees who were involved directly and on a daily basis with the automated systems were included. After collecting the data and removing missing answers, the final sample size of 500 participants (N 500) was acquired to make the inferences.

A structured and self-administered online survey was used to collect primary data. This tool was divided into two sections. The introduction part gathered the categorical demographic data, such as age, gender, marital status and the affiliation with the institution. The second part utilized five-point Likert scale (between strongly disagree and strongly agree) to measure core constructs of Technology Acceptance Model, including perceived usefulness, technological satisfaction and signs of technostress. Also, there were task-specific questions that were included in the questionnaire about attendance checking and payroll monitoring to determine feasibility.

The data that were gathered were coded and analyzed with the help of the Statistical packages of the Social Sciences (SPSS). In order to deal with the main research objectives, the chi-square test of independence developed by Pearson was chosen as the major inferential statistic. This is a non-parametric statistic that is effectively used to find out the important association between independent demographic variables, which are categorical and the dependent variables of satisfaction, which are ordinal. The traditional level of significance used in testing the hypothesis was 0.05. In order to maintain transparency in the methodology, constraints related to the anticipated number of cells in the cross-tabulations were clearly realised at the reporting phase.

4. Results

In this chapter, the authors provide the empirical results of the statistical analysis of the dataset. The SPSS software was used to process 500 valid responses of the participants. The ultimate aim is to assess demographic factors on student attitudes towards digital systems. Independence chi-square tests were carried out to determine statistically significant associations among variables.

The structural framework is used to systematise the findings to answer the main research questions. Each section presents a particular demographic variable and then the statistical outputs of the variable. The analytical methodology guarantees that all the technological adoption metrics of the corporations are evaluated in a rigorous manner. Percentages of cross-tabulation and also the significant values are examined to derive meaningful business insights. Statistical validation: The importance of testing significance levels as well as internal sample distributions should be

considered. The overall accumulative empirical results would provide a base upon which future strategic corporate recommendations would be based.

Age Distribution and Overall Digital System Impact

The 1st test explored the relationship between the categories of age of the participants and the impact of the digital system. This discussion reviews the adaptability of various age groups to contemporary organisational technology implementations.

Age_Cat_Num * Q22_n Crosstabulation

			Q22_n					
			1	2	3	4	5	Total
Age_Cat_Num	31-40	Count	5	4	8	60	62	139
		Expected Count	5.6	2.8	15.8	62.3	52.5	139.0
		% within Age_Cat_Num	3.6%	2.9%	5.8%	43.2%	44.6%	100.0%
	41-50	Count	0	0	8	69	34	111
		Expected Count	4.4	2.2	12.7	49.7	42.0	111.0
		% within Age_Cat_Num	0.0%	0.0%	7.2%	62.2%	30.6%	100.0%
	Above 50	Count	0	0	4	13	20	37
		Expected Count	1.5	.7	4.2	16.6	14.0	37.0
		% within Age_Cat_Num	0.0%	0.0%	10.8%	35.1%	54.1%	100.0%
	Below 30	Count	15	6	37	82	73	213
		Expected Count	8.5	4.3	24.3	95.4	80.5	213.0
		% within Age_Cat_Num	7.0%	2.8%	17.4%	38.5%	34.3%	100.0%
Total		Count	20	10	57	224	189	500
		Expected Count	20.0	10.0	57.0	224.0	189.0	500.0
		% within Age_Cat_Num	4.0%	2.0%	11.4%	44.8%	37.8%	100.0%

Table 4.1: Crosstabulation of Participant Age Distribution and Overall Digital System Impact (Q22)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	44.091[a]	12	.000
Likelihood Ratio	51.184	12	.000
Linear-by-Linear Association	10.894	1	.001
N of Valid Cases	500		

a. 7 cells (35.0%) have expected count less than 5. The minimum expected count is .74.

Table 4.2: Chi-Square Test Results for Age Distribution vs. Overall Digital System Impact

Such a high degree of statistical association between both variables was reflected in the results of the Pearson chi-square statistic. This is 12 separate degrees of freedom and leaves a Chi-square of 44.091. The asymptotic significance actually proved to be < .001.

The number of cells at the amounts expected (less than 5 units) was below 35% of the total cell number, however. The smallest value projected was for the oldest age group, with its number being 0.74. This violation of structure necessitates a careful interpretation of the ultimate statistical significance levels. The respondents who had the highest critical perception of the system were the younger ones who were below the age of 30 years.

In particular, 7% of these younger respondents made the lowest impact scale 1. Instead, another 2.8% of these youths chose response option 2. On the other hand, 54.1% of participants who are over 50 years old had the highest positive system impact rating of 5. The descriptive percentage trend shows that the older age groups are in favour of the technological shift.

The implication is that the younger generations may need more interactive or user-friendly interfaces. Alternatively, automated monitoring tools may be found to be appreciated by older cohorts. The management should develop strategies of digital transition that are inclusive of all ages to ensure overall technology integration in the workplace. The problem of resistance among the different age groups of the organisation can be effectively addressed through thorough training of the users. Differentiated operational assistance guarantees a fair system expertise irrespective of the generation of the employees.

Gender of participants and general impact of the digital system

The 2nd statistical test examined the correlation between technology perceptions and the gender of the participants. This test will be used to find out whether gender demographics affect the adoption of contemporary organisational platforms.

Gender_n * Q22_n Crosstabulation

			Q22_n					Total
			1	2	3	4	5	
Gender_n	Female	Count	6	4	39	124	71	244
		Expected Count	9.8	4.9	27.8	109.3	92.2	244.0
		% within Gender_n	2.5%	1.6%	16.0%	50.8%	29.1%	100.0%
	Male	Count	14	6	18	100	118	256
		Expected Count	10.2	5.1	29.2	114.7	96.8	256.0
		% within Gender_n	5.5%	2.3%	7.0%	39.1%	46.1%	100.0%
Total		Count	20	10	57	224	189	500
		Expected Count	20.0	10.0	57.0	224.0	189.0	500.0
		% within Gender_n	4.0%	2.0%	11.4%	44.8%	37.8%	100.0%

Table 4.3: Crosstabulation of Participant Gender and Overall Digital System Impact (Q22)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	25.323[a]	4	.000
Likelihood Ratio	25.716	4	.000
Linear-by-Linear Association	3.256	1	.071
N of Valid Cases	500		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 4.88.

Table 4.4: Chi-Square Test Results for Gender vs. Overall Digital System Impact

A clean sample of 500 actual academic respondents was used for this cross-tabulation test. The result was shown as Chi-square = 25.323 (as shown above). This test had four degrees of freedom and a high level of statistical significance.

The resulting value of the asymptotic significance was reported as less than 0.001 precisely. The number of cells that had the expected counts fell below the required amount in only 10% of the cells. Thus, the mathematical assumptions of this very test were completely met. The largest percentage that chose option 4 was 50.8% female students, which is the majority population of the students.

The female respondents, however, opted for the lowest response (46.1% for the highest answer). This distribution indicates that males are a little more enthusiastic about the digital platform. The lowest possible system impact score was registered by only by 2.5% of female respondents. In the meantime, 5.5% of the male respondents chose the same highly critical evaluation measure.

The results of the analysis indicate that there are differences between genders in terms of cognitive patterns in the context of technological systemic adjustments. Organisations need to develop training programs that consider these minor differences in baseline acceptance. Gender neutral support mechanisms should be part of the strategic implementation plans to ensure corporate balance objectives are met. These perceptual variances can be addressed to promote an inclusive digital environment for all stakeholders of the corporation.

Marital Status and General Digital System Impact on the participants

The 3rd statistical test was used to determine whether marital status affects user perceptions towards digital organisational systems. Knowing these lifestyle demographics assists organisations in tailoring internal technical support systems to various groups.

Marital_n * Q22_n Crosstabulation

			Q22_n					Total
			1	2	3	4	5	
Marital_n	Married	Count	5	4	25	156	124	314
		Expected Count	12.6	6.3	35.8	140.7	118.7	314.0
		% within Marital_n	1.6%	1.3%	8.0%	49.7%	39.5%	100.0%
	Unmarried	Count	15	6	32	68	65	186
		Expected Count	7.4	3.7	21.2	83.3	70.3	186.0
		% within Marital_n	8.1%	3.2%	17.2%	36.6%	34.9%	100.0%
Total		Count	20	10	57	224	189	500
		Expected Count	20.0	10.0	57.0	224.0	189.0	500.0
		% within Marital_n	4.0%	2.0%	11.4%	44.8%	37.8%	100.0%

Table 4.5: Crosstabulation of Participant Marital Status and Overall Digital System Impact (Q22)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	28.338[a]	4	.000
Likelihood Ratio	27.611	4	.000
Linear-by-Linear Association	17.425	1	.000
N of Valid Cases	500		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 3.72.

Table 4.6: Chi-Square Test Results for Marital Status vs. Overall Digital System Impact

The cross-tabulation analysed was based on 314 married and 186 non-married individuals. Pearson Chi-Square test on this demographic distribution gave a value of 28.338. This particular test had 4 degrees of freedom and a high level of statistical significance.

The last asymptotic level of significance was found to be less than 0.001. No cell was used to show the expected counts that were below 5, and only 1 cell was used to represent 10% of the cells that had the expected counts. As a result, the basic mathematical assumptions of this statistical model were kept.

The lowest possible number of 3.72 was registered in the category of unmarried. System acceptance among the survey population was high among married participants. Almost 49.7% of respondents who answered option 4 to describe system impact were married. The remaining 39.5% of this group gave the highest rating of 5.

On the other hand, unmarried respondents expressed a little more negative attitudes towards the technical platform. Precisely 8.1% of singles gave the lowest rating scale of 1. Response option 4 was only chosen by 36.6% of the unmarried users in the evaluation.

The findings suggest that the routine may make married workers prefer the use of standardised systems. Single cohorts may anticipate greater flexibility in digital capabilities or dynamic capabilities of the contemporary platforms. These domestic demographic differences should be taken into consideration by the management when establishing compulsory electronic monitoring processes.

College Type and General Impact of Digital System.

The 4th test examined the effects of institutional backgrounds on the level of technology acceptance. This analysis will identify whether the attitudes of students to digital changes are influenced by certain educational settings.

College_n * Q22_n Crosstabulation

			Q22_n					Total
			1	2	3	4	5	
College_n	Degree College	Count	16	10	52	161	129	368
		Expected Count	14.7	7.4	42.0	164.9	139.1	368.0
		% within College_n	4.3%	2.7%	14.1%	43.8%	35.1%	100.0%
	Engineering College	Count	4	0	5	63	60	132
		Expected Count	5.3	2.6	15.0	59.1	49.9	132.0
		% within College_n	3.0%	0.0%	3.8%	47.7%	45.5%	100.0%
	Total	Count	20	10	57	224	189	500
		Expected Count	20.0	10.0	57.0	224.0	189.0	500.0
		% within College_n	4.0%	2.0%	11.4%	44.8%	37.8%	100.0%

Table 4.7: Crosstabulation of Institution College Type and Overall Digital System Impact (Q22)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.248[a]	4	.003
Likelihood Ratio	20.901	4	.000
Linear-by-Linear Association	9.555	1	.002
N of Valid Cases	500		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 2.64.

Table 4.8: Chi-Square Test Results for Institution College Type vs. Overall Digital System Impact

The overall sample size consisted of 368 participants in the study who were in standard degree colleges. The other 132 academic respondents were enrolled in special colleges of engineering when the data collection was done. The Pearson Chi-Square value was 16.248 as a result of this distribution.

This statistical test determined 4 degrees of freedom among the institutional types. The test result was 0.003, corresponding to the calculated ASV value. This is a valid result because there is a statistically significant relationship between the type of college and perception.

The diagnostic footnote stated that the low expected counts were in 10% of the cells. The lowest possible is checked at 2.64 in the engineering group. This distribution meets the classical conditions of analysis to carry out a valid chi-square test.

The support for the installed digital organisational network was significantly stronger among engineering college students. 45.5% of all engineering students made the highest positive impact choice of 5. In the meantime, 0% of these technical students used response option 2 in the framework.

The respondents in degree colleges registered a wider range of views on the performance of technical platforms. The degree students only reported maximum approval ratings on the survey (35.1%). The exact percentage of these people was 4.3% with a very low systematic impact rating of 1.

The unique difference indicates that technical training is more inclined to increase the level of comfort with automation. The engineering students have a set of underlying skills that reduce friction in their use of complex digital structures. On the other hand, typical degree students may need special introductory courses to facilitate adjustment to technology.

Schools have to fill this digital literacy gap by using specific system implementation policies. Training resources should be distributed among organisations according to academic background to make the most of the platforms. Individualised learning journeys will speed up organisational productivity and minimise system navigation mistakes.

Gender of Participants and perceptions on attendance monitoring (Q10)

This test entailed assessing the correlation between the gender of the participants and their attitudes towards automated attendance tracking. These gender dynamics will make organisations adopt corporate surveillance systems without a lot of friction in the workplace.

Gender_n * Q10_n Crosstabulation

			Q10_n					
			1	2	3	4	5	Total
Gender_n	Female	Count	11	5	25	114	89	244
		Expected Count	7.8	7.3	26.8	97.1	104.9	244.0
		% within Gender_n	4.5%	2.0%	10.2%	46.7%	36.5%	100.0%
	Male	Count	5	10	30	85	126	256
		Expected Count	8.2	7.7	28.2	101.9	110.1	256.0
		% within Gender_n	2.0%	3.9%	11.7%	33.2%	49.2%	100.0%
Total		Count	16	15	55	199	215	500
		Expected Count	16.0	15.0	55.0	199.0	215.0	500.0
		% within Gender_n	3.2%	3.0%	11.0%	39.8%	43.0%	100.0%

Table 4.9: Crosstabulation of Participant Gender and Perceptions of Attendance Monitoring (Q10)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.685[a]	4	.005
Likelihood Ratio	14.813	4	.005
Linear-by-Linear Association	3.136	1	.077
N of Valid Cases	500		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.32.

Table 4.10: Chi-Square Test Results for Gender vs. Perceptions of Attendance Monitoring

Results of the Pearson Chi-Square test indicated that the variables were related in a statistically significant manner. The result of computing the Chi-Square is 14.685 for 4 degrees of freedom. This gave an asymptotic significance value of 0.005 on analysis.

There was the expected count of 5 units at an overall count of 0%. The lowest anticipated figure was confirmed to be 7.32 in the female population. Male participants showed significantly greater support for automated corporate attendance monitoring procedures.

Precisely half of the male respondents (49.2% of the total) chose the top positive impact score of 5. Conversely, this scale metric of maximum rating was selected only by 36.5% of female respondents. The female categories were mainly concentrated in option 4, with a percentage of 46.7 of the whole group.

The difference indicates that male students adapt better to the digital tracking systems. Women students may have more privacy issues with continuous automated digital surveillance systems. Administrators should come up with clear data usage policies to reduce tracking anxiety amongst users.

Hence, demographic elements play a crucial role in shaping the personal acceptance trends towards contemporary online organisational networks. Operational technological adoption is influenced by generational age, gender, marital status, and institutional backgrounds.

5. Discussion of Findings

The empirical findings indicate that there are huge demographic differences in terms of digital platform acceptance in contemporary organisations. The analysis of such various data trends enables corporate management to maximise its internal technological application strategy. Resource-based approach. Digital capability is one of the fundamental in-house capabilities of contemporary companies. The human resource departments should know the interactions of various employees with automated systems on a regular basis. The data set offers vital structural data that directly connects the backgrounds of the participants to strategic system adoption.

Technology Adaptation and Generational Dynamics

The age distribution analysis indicates extremely multifaceted structural patterns with regard to organisational digital system effects. The Chi-Square test value of 44.091 over 12 df was significant. The resulting significance level became very low (much less than 0.001) in the early stages of empirical testing. But 35 per cent of the cells were

entirely non-conformant to the conventional expected frequency distribution. This particular statistical constraint warrants careful consideration of the seemingly very significant association.

The younger respondents who were below 30 years were found to have a significantly greater resistance to the automated framework. In particular, 7% of these younger people chose the lowest possible impact rating scale. Nevertheless, the respondents aged over 50 gave the largest scale 5 at 54.1%. This enormous deviation is out of line with popular social beliefs on older generation technology aversion trends.

Ageing employees like systematic automated structures since the systematic tracking reduces procedural ambiguity in the workplace. Employees of a younger age demand a very digital interface due to significant experience with personal mobile applications. Therefore, the standard organisational software is usually not able to satisfy the current user interface design requirements. This generational gap has to be bridged by modern human resource managers by means of customisation of the system.

Digitisation of Gendered Perceptions

The 2nd level of analysis explored the gender aspects of the general corporate digital monitoring effect. The assessment was done using a clean empirical sample of 500 valid questionnaire responses. The Pearson Chi-Square test provided a different value of 25.323 with gender. This statistical value had 4 df and attained high significance (less than 0.001) accurately. The number of cells exhibiting expected counts below the necessary safety limit was only 10% of the total. Hence, the mathematical principles underlying this particular gender analysis are very strong.

The females were more responsive to the system acceptance, 50.8% rated 4 as the highest. In comparison, 46.1% of males selected the highest rating (5). Nevertheless, 5.5 per cent of male users were very critical as they selected the lowest measure. This distribution shows a very polarised pattern of response in the male cohort.

Women have moderate and balanced views, and men are extreme in their views, either positive or negative. When rolling out enterprise systems at scale, organisations need to take into account these unique differences in perception. Specific training programs can be helpful to equalise the technology acceptance rates in distinct gender groups.

Impact of Lifestyle Demographics

The 3rd test explored the issues of lifestyle through the correlation of the marital status of the employees with technological adoption. The cross-tabulation profile successfully combined 314 married people and 186 unmarried people. The obtained Pearson Chi-Square value of 28.338 was obtained at the next processing phase. This model had 4 df and produced an asymptotic significance of less than 0.001. The mathematical test confirmed that a mere 10% of the cells contained insufficient counts expected. This is a low percentage, which guarantees high reliability of the demographic pattern of lifestyles observed.

Married respondents demonstrated a very consistent acceptance, with a 49.7% respondents showing a clear choice of response option 4. Moreover, 39.5% of these spouses among professionals expressed their utmost satisfaction with the platform. On the other hand, those who were not married showed a lot more doubt about the obligatory digital monitoring system. The minimum possible systemic impact score was allocated by a 8.1% of unmarried individuals. Stability of lifestyle appears to portray a positive attitude on the willingness of employees to embrace organised habits.

Institutional Environments and Technical Competency

The 4th statistical test compared the technological acceptance difference in different academic college settings. Pearson's chi-square test was a valid measurement of 16.248 with 4 df. The actual significance value under the asymptotic level was 0.003 in this testing phase of the institution. The number of calculated cells that were less than the necessary baseline count was only 10 per cent.

Scholars of engineering showed significantly greater platform support compared to more traditional standard degree college students. In particular, 45.5% of engineering respondents have chosen the highest positive system impact rating of 5. In contrast, just 35.1% of the participants in the standard degree college chose this as the best approval rating.

Academic programs in technical fields have a natural inclination towards increased behavioural comfort with more complex enterprise automation tools. Engineering-capable students have little to no difficulty navigating

complex digital infrastructures. The non-technical students should be provided with specific introductory onboarding courses to reduce anxiety when it comes to systemic workflows.

Acceptability of Surveillance and Privacy

The 5th analysis was based on automated attendance tracking perception among different gender groups. The basic Pearson Chi-Square test was 14.685 and had 4 degrees of freedom. The calculated value of the asymptotic significance was 0.005 precisely when running the database. It is interesting to note that 0% of cross-tabulation cells had an expected count of less than 5 units. This theoretical distribution introduces mathematical perfection of these particular tracking surveillance results.

Male participants exhibited an unusually high level of interest in online attendance tracking systems in the classes. Exactly 49.2% of male respondents select the best method of system approval ratings, namely 5. However, this was true of only 36.5% of female students. The most common representation of the largest group of female users was around response option 4 at 46.7 total representation.

The mentioned outputs suggest that the participants who are female have more privacy concerns in terms of continuous tracking. Any organisation should put its data privacy policies in print to minimise surveillance fear among users.

Implications and Framework Integration of Strategic Human Resources

The aggregate empirical evidence gives critical insights into implementing a successful digitalisation of the modern workplace. Both high technological platforms and capabilities to adopt human capital are organisational resources. Organisations will not be able to attain sustainable competitive advantages when their employees are opposed to the adoption of digital platforms. Managers need to come up with detailed change management models that accommodate certain demographic attributes of users. Commonplace corporate technology implementations often overlook the existence of key lifestyle differences that occur in the contemporary workforces.

Adjusting communication channels, depending on age and education, avoids premature systemic malfunction. An example is that older employees need to be assured of the stability of operations and the obvious utility in the long run. Newer generations need attractive user interfaces that are in line with the global trends in applications. Reducing tracking anxiety of female staff members guarantees increased overall database accuracy rates. Similarly, increasing technical training among standard degree graduates erases initial levels of performance.

Constant monitoring must strike a balance between the functional company monitoring requirements and individual employee expectations. The openness of technical deployments creates trust in the organisation and enhances sustainable engagement with employees. These demographic insights should be incorporated into future business expansions of the company so as to maximise strategic systemic performance. Human resource practitioners should use the leverage of resources by implementing internal technological literacy programmes. These targeted interventions optimise the user proficiency as well as reduce resistance when long-term digitalising.

Incorporation of human diversity in system architectures is paramount to the ultimate success of corporate integration. These subtle analytical understandings are important to embrace in a bid to have fair professional growth and operational excellence.

6. Conclusion and Strategic Recommendations

This research was able to explore the effect of demographic variables on personal adoption of current digital organisational systems. The results of the empirical research that were reported in the test results.docx were based on the 500 valid subjects. This method of systematic analysis guarantees that all the major study variables are evaluated. The overall findings indicate that personal experience profoundly influences the perceptions of the users due to their unique backgrounds. These behavioural differences need to be recognised by corporate leaders in large-scale implementations of technological systems. Having knowledge of various employee demographics will enable human resource departments to develop the best possible workplace transition plans. The resource-based view emphasises the ability of technological adoption as a key factor of competitive advantage. Organisations that are not able to develop sustainable operational excellence will not be able to do this when their workforce is actively opposed to new digital tools. Thus, customised change management models are needed to address user resistance in all categories.

The age structure analysis indicated very significant generational variations in terms of overall systematic impacts. There was surprisingly high acceptance, with 54.1% of maximum ratings being assigned by older participants

over 50 years. On the other hand, younger people who are below 30 years old were more critical of the electronic platform. Particularly, 7% of these younger respondents chose the lowest possible impact score, 1. However, 35% of the cells violated standard expected count assumptions during testing. The given structural limitation is the reason why it should be interpreted carefully at the final level of significance. The high expectations of the youth should be met by the management through the development of visually appealing user interfaces.

The statistical significance of gender demographics has a powerful effect on the general digitalisation of the organisation. Male subjects were more extreme enthusiasts, with 46.1% selecting the highest rating of 5. Women chose the middle options, with 50.8% choosing response option 4 as an alternative. Moreover, gender differences went directly to the automated classroom attendance monitoring system views. Exactly 49.2% of male participants highly approved of continuous electronic tracking mechanisms. In the meantime, only 36.5% of the female respondents expressed this very positive attitude towards surveillance. Those outputs suggest that female users might have more privacy concerns with automated tracking. To safeguard privacy and generate institutional trust, administrators need to develop clear data governance policies.

The aspects of lifestyle, such as marital status of the participants, have a direct influence on the acceptance of digital structures at the baseline. There was a very stable adoption among married professionals, with the highest impact rating of 4 of 49.7%. Another 39.5 per cent of this married group gave the highest rating of evaluation 5. Unmarried people were more sceptical, with 8.1% selecting the lowest rating of 1. Adaptation deployment practices are still necessary to assist employees during their evolving personal lives. These findings suggest that the acceptance of structured routines is positively related to domestic stability. To meet the evolving lifestyle expectations of unmarried employees, supervisors ought to implement flexible features in the system.

Another critical issue that determines the way people react to corporate automation is their institutional backgrounds. The students of the engineering college were found to have a higher platform support compared to the standard degree college students. Technical respondents rated the absolute maximum positive system impact precisely 45.5% as maximum. However, this same positive level of approval was only shared by 35.1% of general degree students. The obvious benefits of technical academic training are the provision of minimum competencies that reduce friction in working with complex systems. The non-technical staff need special introductory classes to make fair skill development throughout the firm.

To sum up, the ability of successful enterprise digitalisation depends greatly on the ability to accommodate human diversity in system architectures. Similar to many other standardised technological implementations, they more often than not fail to succeed when they completely disregard the various user demographic traits. Managers should introduce special channels of communication depending on the age, gender, and education levels. Continuous corporate backing assists in eradicating the disparity in performance among distinct groups of workers at the baseline. The balance between the operational organisational monitoring requirements and personal user privacy expectations leads to the engagement of employees in the long term. In the end, the combination of these empirical demographic clues will enhance the strategic technical performance and workplace efficiency. The future studies ought to consider other aspects of qualitative factors to further understand the behaviour of users. Adopting a comprehensive humanistic approach achieves sustainable professional development in the contemporary digital transformations.

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