European Economic Letters
ISSN 2323-5233
Vol 13, Issue 1s (2023)
http://eelet.org.uk

Examining The Demographic Factors Shaping Employee Job Satisfaction in The Digital Transformation Context: A Quantitative Exploration

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Abstract

Digital Transformation is a methodology of leveraging emerging digital technologies & platforms to re-imagine and re-engineer AS-IS business/operational processes, organizational culture, and user experiences to meet evolving global business requirements. Hence, reimagining the business in the digital age with technological innovation & adoption is the essence of digital transformation. Employee job satisfaction is determined by the degree to which they enjoy their job or specific aspects of it, such as the nature of their work or the quality of their job. This satisfaction level is directly correlated with their work-life balance, work performance management, job rotation/distribution, and skill management.

The key objective of this research is to quantitatively analyze the impact of demographic parameters on the Employee Job Satisfaction Index (%) after digital transformation, considering the potential impacting parameters like Years of Experience, Years of tenure in current organization, Years of tenure in current role & Avg. Yearly learning Hrs. & their correlation, if exists. This analysis not only calculates Employee Job Satisfaction Index (%) based on collected data from structured Likert scale-based interview questionnaires but also builds regression equation to analyze impact of each of the afore-mentioned parameters on gathered Employee Job Satisfaction Index (%).

Procurement management is a core integral part of any organization's business architecture which supports the seamless functioning of other critical systems across the organizational landscape. This study is intended to deal with existing drivers of digital transformation, analyze data to understand the impact of the transformation on employee satisfaction & conclude individual impact of identified parameters to find out potential actions to make improvement in team's job satisfaction of employees in the Procurement Division of a Malaysian Multinational Electricity & Utility Company (to be referred as Case-Organization).

As a research approach, quantitative analysis method is adopted to find out the aforementioned impact of demographic variables post digitalization on employee job satisfaction index % (post digitalization) & research considers a single case study-based approach on Malaysian Multinational Electricity & Utility Company. The primary research leveraged purposeful focused sampling with homogeneous case samples, gathered from a particular group of procurement offices & departments (where the digital transformation was exercised). This group of employees was requested to respond to a questionnaire of 25 structured questions to respond in Likert scale to understand & measure employee satisfaction index along with certain information related to experience, role, learning hrs. etc. to analyze the potential contributing factors. Single organization case study-based approach was taken in this research to evaluate in-depth analysis of the subject matter by circulating questionnaire to experienced, knowledgeable & core stakeholders. Stata-based statistical analysis is done with the help of regression analysis to understand the impact, based on gathered data.

The research reveals the importance of digital transformation from the perspective of employee satisfaction, which is typically ignored as one of the success parameters of digital transformation and also shows which all individual parameters drive employee satisfaction index when digital transformation is undertaken in an organization.

The intended research finding analysis (with certain limitations as mentioned in the sections below) should help senior management of the procurement division to measure the success of digitalization activities from employee acceptance & satisfaction perspectives by understanding human traits, resistance to change, vulnerability to apprehension, impact of learning/skill development etc. so that effective work allocation, better job rotation, improved work-life balance, enhanced work quality and efficient performance management, etc. can be promoted as human-centric outcome of digitalization.

Keywords: digital transformation, job satisfaction, satisfaction index, quantitative analysis, regression analysis, stata, statistical analysis, linear regression model.

INTRODUCTION:

Digital transformation is considered to be the most impactful form of disruptive innovation that can bring value in terms of optimization, digitalization & automation of end-to-end processes to achieve organizational long-term goals. In order to transform the organizational process digitally, organizations need to embrace new-age technologies like business process management, Artificial Intelligence, Robotic Process Automation, Natural Language Processing to name a few. The combined utilization of digital technologies to modernize the process-scape by automating transactions can bring enhanced operational accuracy and motivate the employees to focus on more complex strategic problems.

Now, the introduction of a digitally enabled platform has a direct impact on daily job schedules, volume, complexity, and allocation, resulting in certain impacts on job satisfaction. Employee job satisfaction is evaluated based on the extent to which they prefer their job or certain job aspects, such as the type of work they do or the quality of their job. This level of satisfaction has a direct relationship with work-life balance, work performance management, job rotation/distribution, and skill management.

Hence, it is important & crucial for any digital transformation to be measured on a scale of employee job satisfaction index as employees are directly using & experiencing the impact of digital transformation on a daily transactional basis.

There is not much research analysis available which can establish how much direct impact digital transformation can bring on internal employee job satisfaction. This case study-oriented research, primarily from quantitative perspectives, is intended to fulfill this gap with a reference case study from Malaysian Multinational Electricity & Utility Company (to be referred as Case-Organization).

Hence, to summarize, the research focus is on analyzing digital automation impact with the introduction of BPM, AI/NLP/ML based Text & Sentiment analyzer & RPA on Employee job Satisfaction Index of the procurement division of the Malaysian Electricity Distribution organization.

- **Background Research**: This background study is intended to analyze the previous research initiatives on the effectiveness of digital transformation in sourcing areas and if there is any relationship that exists with job satisfaction.
- **Digital Transformation in Procurement & Sourcing**: Strategic Sourcing can be described as a disciplined & systematic approach for reducing overall costs while improving levels of quality. Strategic Sourcing supports organizational objectives, culture and philosophy, Employee bandwidth, and overall partner-market conditions. In the context of this research study, we have seen three major levers of digital transformation which played critical role in Malaysian Case-Organization to automate & modernize their E2E Procurement landscape as Business Process Management (BPM), Robotic Process Automation (RPA), Natural Language Processing (NLP).

- **Employee Job Satisfaction:** Edwin A. Locke's (1976) definition of job satisfaction is one of the most commonly cited in organizational research. According to him, job satisfaction is characterized as a positive emotional state that results from an individual's assessment of their job or job-related experiences. In simpler terms, job satisfaction refers to the level to which an employee perceives themselves to be motivated and content with their job.

In this research initiative, intention was to measure Employee Satisfaction Index (ESI), an indicator calculates the degree to which the employees are happy with their job profile.

Typically, JSI is calculated with employees score to answers given to the questions with rating '1 – 5' where strongly disagree (scoring 1) to Strongly agree (Scoring 5) and is measured as follows:

Employee Job Satisfaction Index (%)

= (Total point scored against set criteria by each respondent /Total question answered by respondents) x 100

- **Malaysian Multinational Electricity & Utility Company Context:** This study examines a Malaysian multinational electricity and utility company as a case organization. The company in question is the sole electric supply company operating in the Malaysian Peninsula, and it is engaged in the generation, transmission and distribution of electricity. Objectives of case organization's major transformation engagement is to build a unified digitalized platform that facilitates the E2E Procurement Lifecycle process. This 5-years long initiative under CPO leadership is named as Procurement Cycle Digitalization (PCD) which aims to streamline the procurement process, to reduce manual interventions and to provide seamless user (employee) experience via integrated omnichannel platform.

- **Problem Statement:** The research is intended to address the problem statement which typically Chief Procurement Officer & his office typically face, whether or not digital transformation in the areas of procurement & sourcing processes have any direct impact on employee job satisfaction and which all parameters have direct influence of satisfaction mindset.

- **Research Questions:** Saunders et al. (2009) assert that the success of any research project or analysis depends on the effective formulation and framing of research questions. The proper definition of research questions is crucial in enhancing the overall process of drawing valid conclusions from the collected and analyzed data.

In this research project, the overall research objectives are focused on the impact of the digitalization of procurement & sourcing processes in Malaysian Case-Organization on job satisfaction of procurement-facing employees. To obtain targeted results from an assessment or evaluation, it is necessary to develop a set of research questions that the research results are expected to answer.

The following research questions are suggested for each of the research objective are highlighted as follows.

- **RQ#1:** Can digital transformation & system automation of E2E procurement/Sourcing & Tender Management areas impact on Employee Job Satisfaction of the Procurement Division who are playing partner/vendor facing roles?
- **RQ#2:** Which all parameters (variables) have direct impact & influence on Employee Job Satisfaction of the Procurement Division employees and in how much extent?

Aim of this research is to get the answer to the afore mentioned Research Questions so that conclusive inference can be drawn on the correlated entities in scope of this project.

- **Significance & Motivation of the Study:** Success of digital transformation in procurement & sourcing processes should be evaluated not only from operational and financial benefit perspective, but also from the perspective of employee job satisfaction. Even though tactical & cost focused

strategic benefits of digitalization of procurement processes have been extensively discussed, researched & analyzed in multiple literature reviews, relatively less is known on the long-term impact & relationship between procurement process automation and employee job satisfaction. Generally, in most of the cases, the research objectives & aims are associated with the customer satisfaction index or partner satisfaction index or related to turn around time or even financial KPIs, but very rare it is assessed from the perspective of internal employees' & stakeholders' point of view. This research's intension includes addressal of this concern from the perspective of buying organization's internal resource group (Malaysian Case-Organization as in scope). Also, this research is significant as it includes the list of potential parameters which have impact/influence of the satisfaction level & how much impact each of the parameter have.

- **Perceived High Level Benefits from the Study:** The intended research finding analysis should help senior management to concentrate their focus on digitalization & automation activities from internal human resource & leadership perspectives to get the advantages of effective work allocation, better job rotation, improved work life balance, enhanced work quality and efficient performance delivery augmented by proper training, skill management etc. Also, this research outcomes are focused to help Chief Procurement Officer (CPO) office & HR team to evaluate what extra value additions that the digital transformation engagement can bring in Procurement & Sourcing areas from employee job satisfaction index perspective and this study reveals the impacting parameters to consider, while expecting certain positive outcome from digital transformation on human satisfaction & happiness level.
- **Methodology of the Study:** This research initiative has adopted single organization case-based research methodology. Following are the details about research approach, case selection rationale, data collection & overall research process:

- **Research Approach:** A single case study-based quantitative research approach is chosen to find out employees' job satisfaction index % after implementing digital automation of procurement & sourcing life cycle and analyze impacting factors behind the satisfaction/dissatisfaction with help of regression model analysis. Case sample of almost homogeneous (same org, same department employees, commonly impacted by same technology disruption) set was leveraged for data gathering & in-depth analysis.
- **Selection of Case Organization:** A single case organization from Malaysia Energy & Utility sector is considered here to be explored to analyze afore-mentioned critical relationship. The case organization, which is one of the largest electricity generation & distribution companies in Malaysian Peninsula, is chosen because they have rich experience of procurement division, they are currently undergoing digitalization of their automation process for last 5 years with a plan to continue for at least next 5years till they reach targeted maturity and availability of access to their employees/data/systems.
- **Data Collection & Analysis:** The data is gathered and analyzed from both primary and secondary sources.

- **Primary Data Collection & Analysis:** This research leverages primary data collection from sourcing & category managers, leaders & HR personnel from Procurement Division Malaysian Case-Organization on the basis of structured Likert-scale based questionnaire of 25 set of well-thought questions. Based on the inputs received from the responded sheets, the research evaluates the satisfaction level of each of the respondent from various aspects of job satisfaction dimensions and also shows which all human centric parameters have impact on such satisfaction definition.
- **Secondary Data Collection & Analysis:** This research gathered secondary data based on literature reviews of research papers, conference papers, book chapters, analyst report, IT survey report, industry survey reports etc. available on digital web public domains. Malaysian Case-

Organization specific secondary data is analyzed from program documentation, case success stories, quick wins, automation training materials related to digitalization.

- **Scope of the Study:** Following are the high-level research boundaries & limitations which can be addressed as future scope of broader research:

- Research is conducted on One Case from Single organization (Malaysian Case-Organization) in one country (Malaysia). Only Procurement & Sourcing area of the organization is evaluated with an overall universe of around 170 employees to consider for sampling, who are directly impacted by the implementation of digital transformation.
- Impact is measured on single aspect of Job satisfaction Index. No other employee impacts from human resource & leadership perspectives are assessed.
- Time limitation of the research is also considered as important factor as this research needs to adhere to stringent completion timeline.
- Only top 4 impacting parameters are evaluated to assess the impact on job satisfaction while defining the regression model, which has scope to enhance further.

LITERATURE REVIEW:

Digital transformation seems to be the most effective technology-based disruptive innovation that can bring value in terms of optimization, digitalization & automation of end-to-end processes. Digitally transformed business strategy brings cost reductions, enhanced control, and better service quality levels to internal and external stakeholders with enhanced responsiveness. Organizations are reimagining their procurement models and reconceptualizing to create maximum value and gain competitive advantage using digitalization (Berman, 2012).

Digital transformation is widely acknowledged by both academic and professional research and practice as a significant factor in achieving the organizational vision. By following emerging trends such as sustainability, which is closely linked with digital transformation, a digitally transformed process backbone can have a profound impact at the corporate level. Nicoletti (2020) highlights this relationship between sustainability and digital transformation. In a similar vein, Bonnet and Westerman (2020, November 19) argue that a clean and well-structured digital platform is a fundamental requirement for digital transformation, encompassing the technology, applications, and data that power an organization's business processes.

To digitally transform their procurement and sourcing backbone, organizations should consider adopting new technologies such as business process management, artificial intelligence (AI), and natural language processing, as well as robotic process automation. The integration of these technologies has the potential to streamline existing sourcing and procurement flows by automating transactions and improving accuracy, while also empowering sourcing operational managers to focus on more complex strategic issues. By implementing innovative, advanced digital solutions in this space, organizations can gain a competitive advantage, increase transparency, and minimize risk.

To summarize, the introduction of a digitally enabled procurement platform can have a positive impact on job satisfaction by affecting daily job schedules, volume, complexity, and allocation. Job satisfaction is measured by the extent to which employees enjoy their job and individual aspects of it, such as the nature of work or supervision. It is related to employee work-life balance, work performance management, job rotation/distribution, and skill management. According to Rosnowski and Hulin (1992), measuring the overall level of job satisfaction is an essential factor to consider when assessing an employee. The measurement of employee attitudes through job satisfaction is now a common practice in organizations that prioritize the physical and mental well-being of their staff

(Spector, 1997). Moreover, over 70% of organizations are currently investing in employee empowerment programs to improve their work performance (Ergeneli et al., 2007).
Rosnowski and Hulin (1992) suggested that the most important factor to consider about an employee is a valid measure of overall job satisfaction. Increasing job satisfaction is a common concern for supervisors, human resource professionals, managers, employees, and staff in general (Cranny, Smith, & Stone, 1992). In any organization, the assessment of employee attitudes in terms of job satisfaction is a well-known practice that demonstrates management's concern for the physical and mental health of employees (Spector, 1997).
"Hoppock (1935) defines job satisfaction as the expression of contentment by an individual regarding the quality of their work, encompassing a range of psychological, physiological, and environmental factors. Smith et al. (1969) describe job satisfaction as an individual's feelings towards their job, while Locke (1969) defines it as a positive response resulting from the evaluation of one's job, accomplishments, or work-related experiences. Vroom (1982) characterizes job satisfaction as an emotional orientation of workers towards their current job roles."
Choi et al. (2016) have found that there is a clear correlation between employee empowerment and job satisfaction. Matzler & Renzl (2006) have argued that employee satisfaction should be regarded as one of the most essential factors driving both organizational quality and productivity.
Hence, it is important & crucial for any digital transformation to be measured in a scale of employee satisfaction index as business process-oriented employees are directly using & experiencing the impact of digital transformation on a daily transactional basis.
Findings Job satisfaction across workforce levels, particularly for executives in procurement domain, is difficult as they are generally well paid and do not face any physical hazards as such, yet their satisfaction behavior varies because of several job parameters. Proactive innovative futuristic organizations do not only hire and retain the best people in procurement domain but also help employees at different workforce levels understanding motivations, empowering them & making their work more meaningful. The skills requirement and academic requirements differ based on the job role/title. Supply chain management related roles e.g., procurement officers typically require academic degree and solid work experience in multiple areas of the procurement & supply chain domain. Procurement related jobs mostly have the highest salaries, but at the same time it demands the critical proficiency. Supply chain management and Procurement processes share overlapping skill sets - on Supply chain fundamentals, Business skills & Soft skills.
Koh et al. (2014) found that e-procurement can have a positive impact on employee productivity, real-time communication, lean procurement processes, procurement service delivery, and overall procurement efficiency, leading to improved organizational performance. Similarly, Llorens et al. (2013) concluded that effective e-procurement practices can increase transparency, accountability, and value for money, thereby improving employee work ethics and responsibility.

Even though all the scholars accept the important roles played by the procurement automation in next-gen industry vision, yet very limited studies were conducted to explain the details with respect to purchase department employees & their job motivation. To address these gaps, this research proposes to evaluate relation between the impact of digitalization in purchase management process on internal stakeholders' efficiency, motivation, work life balance, workload management.
This research Also tried to identify critical factors those can drive the satisfaction mindset post-implementation of digitalization & overall years of experience, overall year of tenure in specific organization & in specific role, average learning & skill development time spent are considered as impactful parameters to accept the change & embrace new technological changes introduced due to

digitalization. Maaja (2004) suggests that older employees may not be as supportive of organizational goals as younger employees, making change difficult. According to Maaja (2004), older employees may have difficulty supporting change due to their previous experiences. In contrast, Judson (1991) argues that commitment is built over time, so younger people may be less committed and older people may resist change to protect their established commitments. Karen (2007) found that two individual-level characteristics, openness to job changes and organizational tenure, are significantly related to resistance to change. Skill development, learning, and development can help reduce resistance to change, lack of motivation, technophobia, computer anxiety, and lack of IT confidence (Childs et al., 2005). Enablement is one of the four main leadership focuses of digital business transformation, according to Larjovuori et al. (2018).

These aforementioned literature reviews suggested about the parameters to consider while evaluating impact on job satisfaction post digitalization & quantitatively evaluate the corresponding impact to get a better & broader view.

Background Review from Malaysian Case-Organization Context: This research considers Malaysian multi-national electricity & Utility company as case organization which is the only electricity supply organization in Malaysia Peninsula & the biggest publicly listed electricity company in Southeast Asia with MYR 99.03 billion worth of assets. It caters around 8.4 million consumers across Peninsular Malaysia. The organization engages in various activities related to the production and distribution of electricity, such as power generation, transmission, and distribution. Additionally, the organization is involved in repairing, testing, and maintaining power plants, offering engineering, procurement, and construction services for power plant-related products, assembling and manufacturing high voltage switchgears, as well as coal mining and trading.

Objectives of Malaysia's major transformation engagement is to build a unified platform that facilitates and guides the E2E Procurement Lifecycle process via Business Process Management System suite. This engagement is named as Procurement Cycle Digitalization (PCD) which aims to streamline the Procurement Process and to provide Seamless Customer Experience via integrated omnichannel platform.

In order to get rid of existing challenges like Manual & Silo Procurement Processes, No visibility to track status of a case, Bad customer experience, Demoralized vendors etc., Malaysian Case-Organization wanted to develop a holistic platform on Pega 8 (both on Web & mobile) that can automate & standardize the E2E Procurement life cycle including E- Sourcing, Approval for Sourcing & Tender Preparation, Tender Submission & Sample Management, Tender Evaluation/Negotiation, Memo Preparation & Award, Material Delivery Application, Credit Material Request & Status Management, Scrapping Process Management, Logistic Management etc.

Hence, broad objectives of the procurement division were to bring digitalization, automation and transformation of procurement cycle under the leadership of CPO and they named the 5-years long transformation program as "Procurement Cycle Digitalization (PCD)".

Malaysian Case-Organization Procurement users required new skills and knowledge to adopt and support digitally transformed procurement platform. Training and knowledge transfer (KT) are key components of organizational change management approach to ensure following key outcomes are achieved as part of the overall change journey.

Targeted and effective training can only occur by first understanding the needs and characteristic of the audience. Training needs analysis is required to establish the impact to different user groups and their training requirements for successful understanding and adoption of the changes in the new set of processes and system. Identification of the target audience and their training needs is a cornerstone to

successful training. Depending on the impact of the changes and the size of the end user, the training strategy included Train the Trainer (TTT) methodology or a Direct End User Training (EUT) methodology limited to certain key users from Procurement division.

The primary users from the Procurement division, category managers, business users, procurement leads etc., were expecting the lots of benefits from the implementation of BPM, NLP & RPA in the space of procurement & sourcing, especially from the perspective of user experience by re-shaping the value proposition of users (employees) by enriching, enhancing and redefining the overall work experience.

RESEARCH METHODOLOGY & DATA GATHERING:

This research initiative has adopted single organization case-based quantitative research methodology to measure the job satisfaction index of the population we considered for this research & explore the possible impact of certain behavioral parameters on satisfaction mindset after the digitalization of sourcing & procurement processes. Following are the details about research approach, case selection rationale, data collection & overall research process:

Research Approach: A single case study-based quantitative research approach is chosen because of the intention to find out the impact of a possible correlation among the identified parameters & measure their potential effect on job satisfaction of procurement officers & employees of purchase department. This research considered the Purposeful Sampling method to conduct the quantitative research. To carry out purposeful & focused sampling, it is essential to have contact with key individuals in the relevant field who can assist in identifying cases that are rich in information (Suri, 2011; Patton, 1990). This sampling is a kind of nonprobability sampling approach where units are selected for inclusion in the intended sample because of their specialization & characteristics. The credibility and usefulness of purposeful samples are often called into question due to their small size, but their logic and efficacy rely on the selection of information-rich cases for in-depth examination. Information-rich cases pertain to significant issues that are essential to the research, hence the utilization of purposeful sampling (Shaheen et al., 2019). This sampling was done on a group of homogeneous stakeholders in terms of department, educational qualification & all of them are direct stakeholders or impacted entities of the digital transformation in the case organization and accordingly primary data was conducted. The aim of utilizing homogeneous sampling is to thoroughly describe a specific subgroup (Patton, 1990). Studying typical programs through purposeful sampling does not necessarily allow for rigorous generalizations. To add to the previous statement, maximum variation sampling aims to capture diverse perspectives and experiences from a wide range of participants, in order to generate a comprehensive understanding of a phenomenon (Patton, 2002). This type of sampling is useful when the goal is to identify commonalities or differences across subgroups, rather than to gain a detailed understanding of a particular subgroup (Palinkas et al., 2015). To ensure a participatory synthesis between the researchers and practitioners, a more or less homogeneous form of purposeful sampling was utilized in this study within a specific department of an organization as a case study for their digital transformation initiative. This approach was chosen because homogeneous samples are well-suited for participatory syntheses, where researchers and practitioners collaborate to synthesize research on a phenomenon that has direct implications for their practice. (Suri, 2007)

Selection of Case Organization: Case is a descriptive research document, often presented in narrative form, based on a real-life situation or event, and can convey a balanced, multidimensional representation of the context, participants, and reality of the situation. Cases are real & are created explicitly for careful research and study to seek to include sufficient detail & information to elicit active analysis and interpretation by users with differing perspectives. A case-based approach can

provide scholarly inquiry that investigates a phenomenon within its real-life context and helps in observing all of the variables and their interacting relationships. The purpose of most case-based research is to answer the why and how questions. In this study, primarily reflective case analysis was done to gather an explanation of a phenomenon. (Dooley, L. M., 2002). Typical cases are selected 'with the cooperation of key informants' or using 'statistical data… to identify "average-like" cases. When employing typical case sampling, it is crucial 'to attempt to get broad consensus about which cases are typical–and what criteria are being used to define typicality' (Patton, 2002, p. 236, Suri, 2011).

The selection of a single case organization from Malaysia Energy & Utility sector is considered here to analyze the applicability of the afore-mentioned critical relationship. The case organization, which is one of the largest electricity generation & distribution companies in the Malaysian Peninsula, was chosen because they have rich experience of procurement division, they are currently undergoing digitalization of their automation process for last 5 years with a plan to continue for at least next 5years till they reach targeted maturity and availability of access to their employees/data/systems. In addition, Malaysian Case-Organization, being a large public company with significant purchasing ability, it has every perspective to help us to analyze e-procurement system implementation success in connection with employee performance & job satisfaction.

Unit of Analysis – Inclusion & Exclusion: The unit of analysis is selected as Procurement Division of Malaysian Case-Organization as they are owning the E2E procurement process and the vision of single consolidated e-procurement system implementation with continuous improvement is part of their departmental KPIs. Only the employees who are not directly associated or impacted within this department by the digitalization are excluded from the sample selection along with few employees who are on paid/maternity or other leaves or working as contractual are also not considered.

Challenges in Unit Selection & Sparsity Perspective: It is acknowledged that use of a single case organization sometimes restricts generalizability of findings, but being the research in its early formative phase, a deliberate selection has been made to restrict the boundary of research attention to a single case organization to explore thoroughly the existence of core paradigms of relationship under research propositions that can be concluded within the available time frame. This research is intended to evaluate Procurement Division of Malaysian Case-Organization as they are owning the E2E procurement process due to the access I have in this division to get the data collected for further analysis, though it was initially a challenge to educate the stakeholders about the intension of this academic research and get the approval.

Data Collection: The data is gathered and analyzed from both primary and secondary sources. This both-way approach enables in obtaining multiple perspectives (procurement manager, category managers, project managers and organization leaders, technical consultants etc.) & provides systematic way to compare responses from different perspectives.

Primary Data Collection & Analysis: This research leverages primary data collection from sourcing & category managers, leaders & HR personnel from Procurement Division Malaysian Case-Organization on the basis of structured Likert-scale based questionnaire with some open-ended questions as well to understand demographic details. Based on the inputs received from the response sheets, the research evaluates the correlation/regression impacts among in-scope research entities & on job satisfaction index.

Primary way of gathering the details from the identified stakeholders are Likert scale-based data gathering via questionnaire sheet shared via email along with few informal discussions via MS-Teams to educate them about the proposed research. This intended population of the research includes

employees in the capacity of category manager, Senior Managers/Workstream Leaders, Approving Managers, Business Users, ICT/IT Consultants, HR personnel etc. of procurement department.
Any personal details of participating employees (like age, sex, address, contact number etc.) are not recorded due to privacy & information security commitment. This is to mention that this research initiative is independently conducted by the researcher and not funded or sponsored by Case organization or its employees or by any partners/suppliers/vendors. This research is conducted with complete personal academic inquisitiveness without any profitable intention. The participants voluntarily responded to the questions with their consent (Consent Form used is attached) to help this academic study and no personal details from them were captured or used in this research.
Secondary Data Collection & Analysis: This research gathered secondary data based on literature reviews of research papers, conference papers, book chapters, analyst report, IT survey report, industry survey reports etc. available on digital web public domains & added in the Reference section in this paper. Malaysian Case-Organization specific secondary data is analyzed from program documentation, case success stories, quick wins, automation training materials related to digitalization in the organization.
Secondary data is an essential component of research as it helps to validate and verify the findings of primary research, such as interviews and discussions. In addition, secondary data can serve as a baseline for the analysis of primary data and can enhance the overall validity and reliability of the research. The use of both primary and secondary data collection methods can lead to better coverage and more robust findings.
Research Tool: This research project leverages MS-Excel Form as the primary data collection tool to gather, analyze and initial processing of the data collected from the responses of employees of Malaysian Case-Organization of the same department where digital transformation is exercised. No personal information is captured and leveraged in the process of analysis & all the details remain confidential, anonymous and used only for this academic analysis.
The quantitative analysis of normality, skewness, heteroscedasticity, possible auto-correlation, multicollinearity & final regression via 'STATA to execute statistical testing & synthesis of data. STATA Release 14.2 Parallel Version is leveraged here to upload the data set & perform multiple tests, statistical analysis, graphical analysis, hypothesis testing & regression modelling.

QUANTITATIVE DATA ANALYSIS - APPROACH & RESULTS:

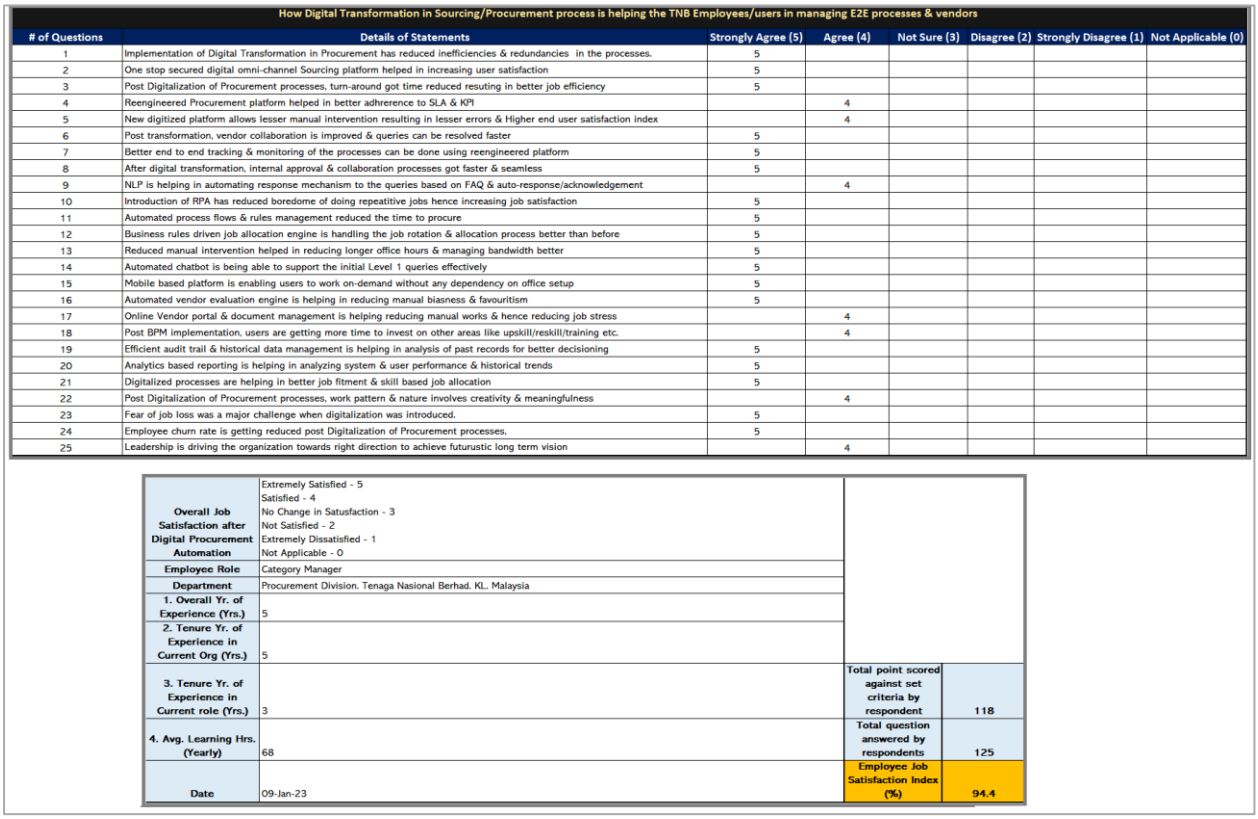
Quantitative Analysis Approach: Even though tactical & cost focused strategic benefits of digitalization of procurement landscape has already been widely discussed, researched & analyzed in numerous literature reviews, relatively less is known on the long-term impact & relationship between procurement process automation and employee satisfaction. This research's intension includes analysis of this perspective from the perspective of buying organization (Malaysian Case-Organization Procurement Division as in scope). This association is assessed by deriving a set of parameters & propositions that help in establishing the correlation in new age e-procurement driver organizational change. The research assertion on a possible association is evaluated by analyzing data set collected from responses received from Malaysian Case-Organization procurement team based on circulated Likert-scale based questionnaire. The intention of research finding analysis is to help notify senior management to emphasize their attention to these digitalization & automation activities not only from operational & Cost effectiveness perspective, but also from internal human resource & leadership perspectives to get the advantages of effective work allocation, better job rotation, improved work life balance, enhanced work quality and efficient performance delivery augmented by proper training, skill management etc. & understand which all demographic parameters have direct impact of mental

acceptance & job satisfaction of the employees. The data is gathered and analyzed from both primary and secondary sources. This both-way approach enables in obtaining multiple perspectives (procurement manager, category managers, project managers and organization leaders, technical consultants etc.) & provides systematic way to compare answers from different perspectives. This research gathered secondary data based on literature reviews of research papers, conference papers, book chapters, thesis notes, analyst report, IT survey report, industry survey reports etc. available on digital web public domains. Malaysian Case-Organization specific secondary data is analyzed from program documentation, case success stories, quick wins, automation training materials related to digitalization in the organization. Though the sample targeted population size might look smaller (~170 employees are covered) but this sample is perfectly targeted, focused and directly impacted by the digital transformation in procurement space for Malaysian Case-Organization and hence they are knowledgeable and have hands on experience & expertise in the areas we are considering in scope. Therefore, the responses are volume wise lower but quality wise completely aligned. These respondents are experts & experienced in the field and contributed critically to interview process.

Circulated set of Questionnaire for Analysis: This research process leveraged 25-questionnaire-based data collection set & circulated in procurement departments employees like category managers, workstream leaders, business users, IT consultants, approvers, CPO Office etc. via email, and the outcome of the discussions are gathered, analyzed & documented for statistical analysis. This research considers around ~95% of the entire research universe as population in scope for primary data analysis & received response from 83% of targeted universe. Based on the scorecard derived from the responses of the questionnaires, this research formulates a focused outcome to justify the impact of digitalization & automation from employee satisfaction perspective. Survey questionnaire is critically designed with set of 25 well-thought questions which can be answered by procurement department stakeholders in less than 15mins yet the response can be effectively help the research process. The use of questionnaire surveys is a valuable tool for gaining an understanding of organizational reality as experienced by those who are directly involved, according to Giordano (2003, p. 174). Entire survey questionnaire sheet has question-specific weighted scores against each of the question that combines together to generate respondent specific total score. With the total score per respondent, the analysis calculates each respondent specific employee job satisfaction index in terms of percentage (%). Based on the total number of 25 questions, where maximum scores can be 125, the individual scores from the responded are recorded. Based on the maximum total possible score and individual rated scores, the responded specific analysis of Employee Job Satisfaction Index % scores are auto-calculated with MS-Excel based formula defined as per Formula to calculate eJSI. The scores are tracked with respect to roles of the responded as well to get another perspective of the analysis. A sample set of questionnaires, framed for the organization's Procurement Division employees is depicted below.

How Digital Transformation in Sourcing/Procurement process is helping the TNB Employees/users in managing E2E processes & vendors							
# of Questions	Details of Statements	Strongly Agree (5)	Agree (4)	Not Sure (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (0)
1	Implementation of Digital Transformation in Procurement has reduced inefficiencies & redundancies in the processes.						
2	One stop secured digital omni-channel Sourcing platform helped in increasing user satisfaction						
3	Post Digitalization of Procurement processes, turn-around got time reduced resulting in better job efficiency						
4	Reengineered Procurement platform helped in better adherence to SLA & KPI						
5	New digitized platform allows lesser manual intervention resulting in lesser errors & Higher end user satisfaction index						
6	Post transformation, vendor collaboration is improved & queries can be resolved faster						
7	Better end to end tracking & monitoring of the processes can be done using reengineered platform						
8	After digital transformation, internal approval & collaboration processes got faster & seamless						
9	NLP is helping in automating response mechanism to the queries based on FAQ & auto-response/acknowledgement						
10	Introduction of RPA has reduced boredome of doing repeatitive jobs hence increasing job satisfaction						
11	Automated process flows & rules management reduced the time to procure						
12	Business rules driven job allocation engine is handling the job rotation & allocation process better than before						
13	Reduced manual intervention helped in reducing longer office hours & managing bandwidth better						
14	Automated chatbot is being able to support the initial Level 1 queries effectively						
15	Mobile based platform is enabling users to work on-demand without any dependency on office setup						
16	Automated vendor evaluation engine is helping in reducing manual biasness & favouritism						
17	Online Vendor portal & document management is helping reducing manual works & hence reducing job stress						
18	Post BPM implementation, users are getting more time to invest on other areas like upskill/reskill/training etc.						
19	Efficient audit trail & historical data management is helping in analysis of past records for better decisioning						
20	Analytics based reporting is helping in analyzing system & user performance & historical trends						
21	Digitalized processes are helping in better job fitment & skill based job allocation						
22	Post Digitalization of Procurement processes, work pattern & nature involves creativity & meaningfulness						
23	Fear of job loss was a major challenge when digitalization was introduced.						
24	Employee churn rate is getting reduced post Digitalization of Procurement processes.						
25	Leadership is driving the organization towards right direction to achieve futurustic long term vision						

A sample of a filled-up questionnaire is presented below as a reference:



How Digital Transformation in Sourcing/Procurement process is helping the TNB Employees/users in managing E2E processes & vendors

# of Questions	Details of Statements	Strongly Agree (5)	Agree (4)	Not Sure (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (0)
1	Implementation of Digital Transformation in Procurement has reduced inefficiencies & redundancies in the processes.	5					
2	One stop secured digital omni-channel Sourcing platform helped in increasing user satisfaction	5					
3	Post Digitalization of Procurement processes, turn-around got time reduced resuting in better job efficiency	5					
4	Reengineered Procurement platform helped in better adhrerence to SLA & KPI		4				
5	New digitized platform allows lesser manual intervention resulting in lesser errors & Higher end user satisfaction index		4				
6	Post transformation, vendor collaboration is improved & queries can be resolved faster	5					
7	Better end to end tracking & monitoring of the processes can be done using reengineered platform	5					
8	After digital transformation, internal approval & collaboration processes got faster & seamless	5					
9	NLP is helping in automating response mechanism to the queries based on FAQ & auto-response/acknowledgement		4				
10	Introduction of RPA has reduced boredome of doing repeatitive jobs hence increasing job satisfaction	5					
11	Automated process flows & rules management reduced the time to procure	5					
12	Business rules driven job allocation engine is handling the job rotation & allocation process better than before	5					
13	Reduced manual intervention helped in reducing longer office hours & managing bandwidth better	5					
14	Automated chatbot is being able to support the initial Level 1 queries effectively	5					
15	Mobile based platform is enabling users to work on-demand without any dependency on office setup	5					
16	Automated vendor evaluation engine is helping in reducing manual biasness & favouritism	5					
17	Online Vendor portal & document management is helping reducing manual works & hence reducing job stress		4				
18	Post BPM implementation, users are getting more time to invest on other areas like upskill/reskill/training etc.		4				
19	Efficient audit trail & historical data management is helping in analysis of past records for better decisioning	5					
20	Analytics based reporting is helping in analyzing system & user performance & historical trends	5					
21	Digitalized processes are helping in better job fitment & skill based job allocation	5					
22	Post Digitalization of Procurement processes, work pattern & nature involves creativity & meaningfulness		4				
23	Fear of job loss was a major challenge when digitalization was introduced.	5					
24	Employee churn rate is getting reduced post Digitalization of Procurement processes.	5					
25	Leadership is driving the organization towards right direction to achieve futurustic long term vision		4				

Overall Job Satisfaction after Digital Procurement Automation	Extremely Satisfied - 5 Satisfied - 4 No Change in Satusfaction - 3 Not Satisfied - 2 Extremely Dissatisfied - 1 Not Applicable - 0		
Employee Role	Category Manager		
Department	Procurement Division, Tenaga Nasional Berhad, KL, Malaysia		
1. Overall Yr. of Experience (Yrs.)	5		
2. Tenure Yr. of Experience in Current Org (Yrs.)	5		
3. Tenure Yr. of Experience in Current role (Yrs.)	3	**Total point scored against set criteria by respondent**	118
4. Avg. Learning Hrs. (Yearly)	68	**Total question answered by respondents**	125
Date	09-Jan-23	**Employee Job Satisfaction Index (%)**	94.4

Quantitative Data Analysis & Interpretation: This research process leveraged 25-questionnaire-based data collection set to get the Likert scale-based response to collect the responses from the respondents. Now based on the scores shared by respondents, Employee Job Satisfaction Index (eJSI) is calculated for each of the respondents with different roles (as mentioned in the last section) based on the formula as mentioned below.

Formula to calculate Employee Job Satisfaction Index (eJSI): "Calculate the score per each responded question (exclude all respondents who did not respond to one or more of the asked questions). As a next step, for each respondent,

1) sum up all the scores received for each response
2) then divide the result by the maximum possible score
3) multiply it by 100."

This research has considered the formula as mentioned above though there are other ways as well to calculate employee job satisfaction index, but in this research, we have considered only "Formula to calculate eJSI" as mentioned above to come up with employee job satisfaction index for each respondent based on the responses received on set questionnaire.

Overall, Job satisfaction is primarily evaluated on the basis of 5 high level parameters (and accordingly the questions are framed) - Job Efficiency, Job Transparency, Job Fitment, Job Allocation & Job Meaningfulness, for the purpose of this research and accordingly the overall satisfaction value is interpreted & analyzed. Based on the data set & data preparation process opted as mentioned in the afore-mentioned section, Total Individual Scores for each respondent are tracked with respect to total maximum possible scoring to evaluate each respondent specific Employee Job Satisfaction Index (eJSI%) score. The captured data set with corresponding eJSI% score is analyzed & mapped against employee roles & following are the analysis result we found:

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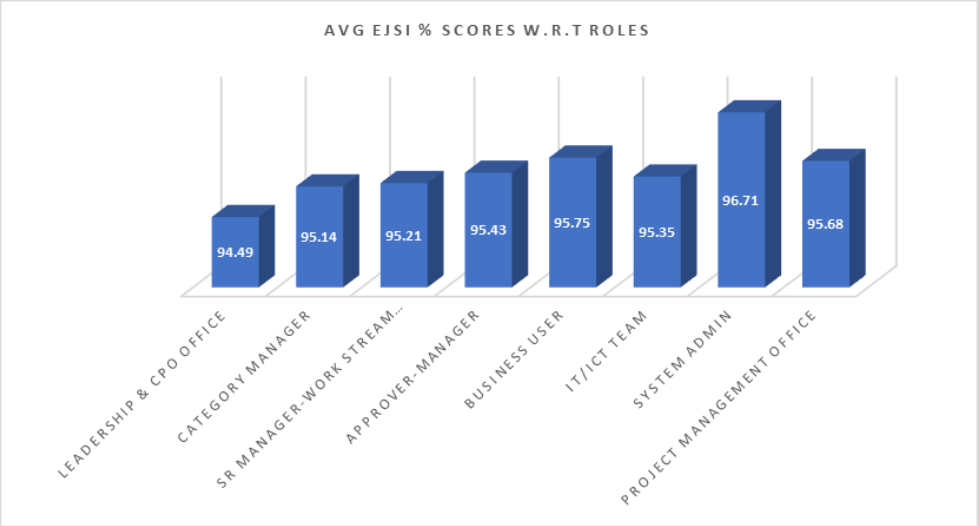


Also, the same data set is sliced & diced to get overall idea on the respondent wise score distribution pattern based on few critical parameters (which details are captured as part of the questionnaire) as listed below:

- emp_ejsi : Employee Job Satisfaction Index %
- emp_exp : Yrs. Of Exp
- emp_ten : Yrs. Of tenure in current organization
- emp_rol : Yrs. Of tenure in current role
- emp_learn: Employee Yearly learning Hrs.

We have considered the Yrs. of Experience, Yrs. Of tenure in current organization, Yrs. Of tenure in current role and Employee Yearly learning Hrs. are the 4 most critical independent parameter which might have impact on Employee Job Satisfaction Index % based on the literature review & previous analysis performed by other researchers.

Studies have indicated that job satisfaction and work experience can foster a greater desire for empowerment among employees, regardless of cultural context. Employees who exhibit behaviors associated with job satisfaction and work experience are more likely to pursue empowerment (Gill, 2012). According to Eleswed and Mohammed (2013), demographic variables such as gender, age, years of experience, education level, and position type can impact both job satisfaction and organizational commitment. Siti Aisyah et al. (2022) found through an experiment that demographic factors, including age and years of experience, had a negative impact on organizational commitment, but did not significantly affect positive job satisfaction. Morris and Venkatesh (2000), as cited in Robbins (2003), discovered that age plays a significant role in technology adoption, and younger and older employees have different attitudes towards technological change (Smith, 1994). According to Alas and Sharifi (2002), 59% of young managers showed support for change right from the beginning, while 52% of older managers began to provide full support only after they recognized the advantages of the change. Felix et al. (2013) found that as individuals age, they tend to exhibit a greater resistance to organizational change, indicating a positive relationship between age and resistance to change. Millar and Millar (2012) argue that individuals tend to resist change and prefer to maintain the status quo due to an innate tendency. This is because change often creates uncertainty in the business environment. When a change is introduced within an organization, it can cause uncertainty and anxiety among employees who may be concerned about the potential impact on their financial security and identity. As a result, resistance to change is a common response among staff members. This resistance

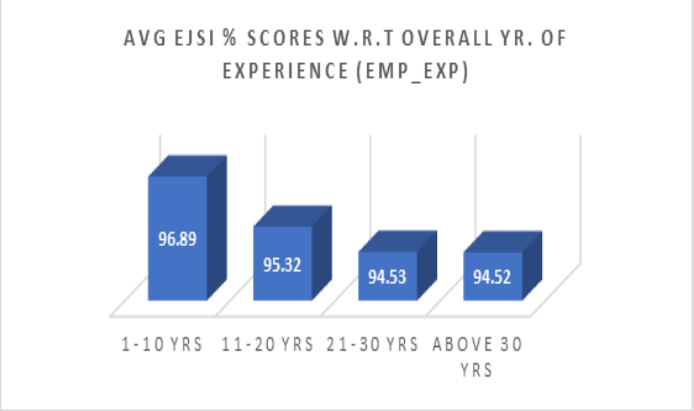
can be attributed to employees' natural tendency to prefer maintaining the status quo rather than adopting new ways of doing things. Many studies have identified a lack of communication and clarity in information sharing between managers and employees as common causes of resistance to change (Mittal, 2012; Cooper, 2015).

Wharton et al. (2000) discovered that job satisfaction is more significant in departments where the average job tenure is higher, though the individual-level effect of tenure on job satisfaction was not statistically significant. Additionally, Struijs (2012) found that job tenure has a direct impact on resistance to change and job satisfaction. Knights and Kennedy (2005) argue that there are no notable differences in the levels of job satisfaction based on several demographic factors such as gender, age, educational level, length of tenure, or job location.

Learning has been shown to have a direct impact on employee resistance, and the process of "Enablement" can help employees develop the skills they need to manage their newly empowered status and succeed in their jobs (Barner, 1994). Overcoming employee resistance requires creating motivation for employees to learn and adapt, as well as implementing well-designed plans that encourage employee involvement at every step of the change process (Ndou, 2004). Numerous frameworks and models have been proposed, with many emphasizing the development of skills and the use of particular tools and technologies to facilitate digital transformation. The term "digital competence" can be described as the collection of knowledge, skills, attitudes (which includes abilities, strategies, values, and awareness), necessary to effectively use information and communication technologies (ICT) and digital media. Seufert and Meier (2016) argue that digital transformation requires employees to have a wide range of skills, including task performance, problem-solving, communication, information management, collaboration, content creation and sharing, as well as knowledge-building. Moreover, these skills should be developed in a way that is effective, efficient, appropriate, critical, creative, autonomous, flexible, ethical, reflective, and applicable to various domains, such as work, leisure, participation, learning, socializing, consumption, and empowerment. Based on the afore-mentioned support of literature review, we have gone ahead with the 4 potentially impactful parameters to form the regression model.

The captured data set with calculated values of Employee Job Satisfaction Index % is analyzed w.r.t the remaining 4 independent parameters & following are the overall graphical analysis:

- Employee Job Satisfaction Index (emp_ejsi) % w.r.t Yrs. Of Exp (emp_exp)



European Economic Letters
ISSN 2323-5233
Vol 13, Issue 1s (2023)
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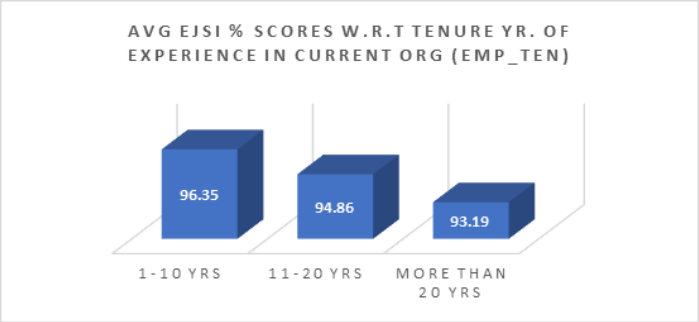
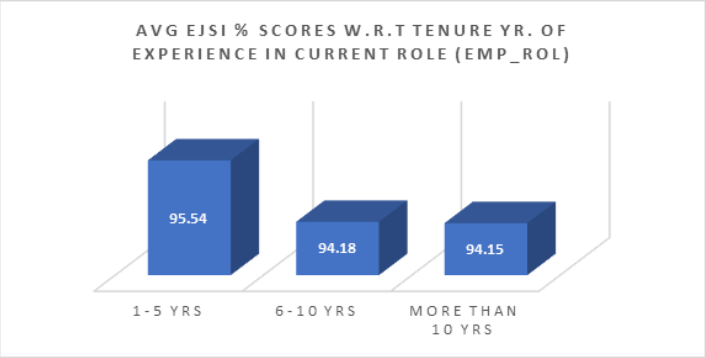
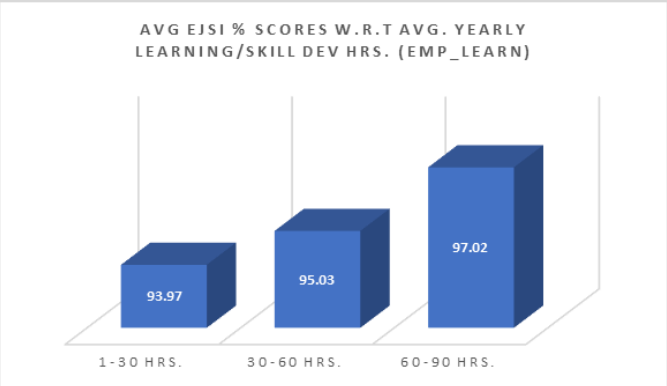
- Employee Job Satisfaction Index (emp_ejsi) % w.r.t Yrs. Of tenure in current organization (emp_ten)



- Employee Job Satisfaction Index (emp_ejsi) % w.r.t Yrs. Of tenure in current role (emp_rol)



- Employee Job Satisfaction Index (emp_ejsi) % w.r.t Employee Yearly learning Hrs. (emp_learn)



Now, this research Employee Job Satisfaction Index % as dependent variable & Yrs. Of Exp, Yrs. Of tenure in current organization, Yrs. Of tenure in current role, Employee Yearly learning Hrs. as independent variable & intention is to measure the impact of the independent variables on the dependent one & form a regression equation.

- emp_ejsi : Employee Job Satisfaction Index %
- emp_exp : Yrs. Of Exp
- emp_ten : Yrs. Of tenure in current organization
- emp_rol : Yrs. Of tenure in current role
- emp_learn: Employee Yearly learning Hrs.

Based on the above parameters, followings are assessed based on the statistical analysis performed on

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Stata platform:

- Leveraged appropriate methodology and estimate regression model to understand the impact
- Performed a thorough diagnostic tests of the errors and analyze the result

Based on the loaded data, primary Summary Statistics & Univariate analysis was performed:

. summarize emp_ejsi emp_exp emp_ten emp_rol emp_learn

Variable	Obs	Mean	Std. Dev.	Min	Max
emp_ejsi	140	95.42786	1.558318	92	99.2
emp_exp	140	15.03571	7.515366	1	35
emp_ten	140	10.55714	6.356633	1	25
emp_rol	140	3.021429	1.93962	1	13
emp_learn	140	49.87857	18.54548	8	90

.univar emp_ejsi emp_exp emp_ten emp_rol emp_learn

				Quantiles				
Variable	n	Mean	S.D.	Min	.25	Mdn	.75	Max
emp_ejsi	140	95.43	1.56	92.00	94.40	95.20	96.30	99.20
emp_exp	140	15.04	7.52	1.00	11.00	14.00	21.00	35.00
emp_ten	140	10.56	6.36	1.00	5.00	11.00	14.50	25.00
emp_rol	140	3.02	1.94	1.00	2.00	3.00	4.00	13.00
emp_learn	140	49.88	18.55	8.00	38.00	48.00	64.00	90.00

Interpreting Univariate analysis indicate the spread of data and considerable difference in median and mean. On this set initial regression analysis was performed:

. regress emp_ejsi emp_exp emp_ten emp_rol emp_learn

Source	SS	df	MS		
				Number of obs	= 140
				F(4, 135)	= 64.33
Model	221.389095	4	55.3472738	Prob > F	= 0.0000
Residual	116.152262	135	.860387126	R-squared	= 0.6559
				Adj R-squared	= 0.6457
Total	337.541357	139	2.42835509	Root MSE	= .92757

emp_ejsi	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
emp_exp	-.0414806	.0149106	-2.78	0.006	-.0709692	-.0119921
emp_ten	-.0405943	.0199154	-2.04	0.043	-.0799808	-.0012079
emp_rol	-.0116725	.0433305	-0.27	0.788	-.0973668	.0740219
emp_learn	.0492776	.0050344	9.79	0.000	.0393211	.0592342
_cons	94.05748	.3792627	248.00	0.000	93.30741	94.80754

F-stat interpretation:

- F stat not equal to 1 , that means explained variance is not equal to residual variance.
- Probability near to zero explains that it is a good fit model.
- R square =0.6559 means 65.5 % of variation in emp_ejsi is explained by variation in number independent variables.

Hence, we are getting a linear regression model :

(emp_ejsi)= 94.057 –0.0414 * (emp_exp) – 0.0405 * (emp_ten) - 0.0116 * (emp_rol) + 0.0492 * (emp_learn) + (residual)

Residuals were calculated in stata as follows and mean was calculated for residues to check the validity of first assumption of E(u)=0:

. predict resid1, resid

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Diagnostic Test

Check for **normality of the disturbances**

. mean resid1

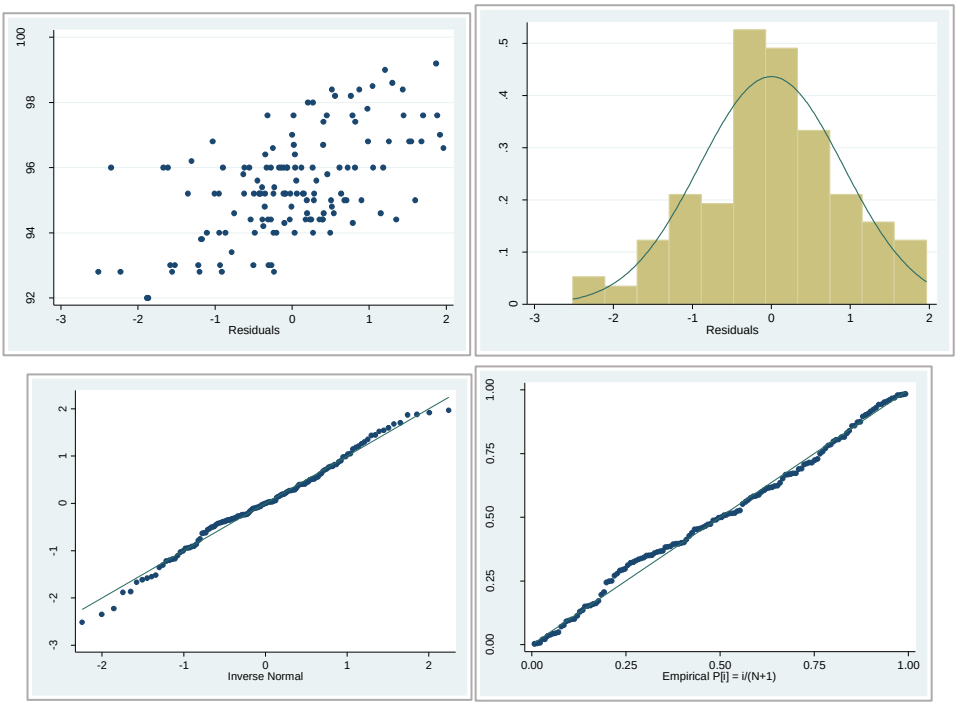
```
Mean estimation                   Number of obs    =       140

--------------------------------------------------------------
             |       Mean   Std. Err.      [95% Conf. Interval]
-------------+------------------------------------------------
      resid1 |  -1.34e-09   .0772578      -.1527524    .1527524
--------------------------------------------------------------
```

. twoway (scatter emp_ejsi resid1)

. histogram resid1, normal

. qnorm resid1

. pnorm resid1



The qnorm & pnorm analysis is done after looking at the scatter map & histogram and data distribution was found quite close to the line though not fully coinciding with it.

Diagnostic Test

Check for normality of the disturbances: **Jarque-Bera test**

. jb resid1

```
. jb resid1
Jarque-Bera normality test:  .7258 Chi(2)  .6957
Jarque-Bera test for Ho: normality:
```

Since p-value (0.05) < Chi(2) (0.6957) , we fail to reject null hypothesis, implying that residuals are normally distributed

Diagnostic Test

Check for normality of the disturbances: **Shapiro-Wilk test of normality:**

. swilk resid1

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
resid1	140	0.98879	1.230	0.468	0.32000

Since P value (0.32000) > 0.05, we fail to reject null hypothesis, implying that residuals are normally distributed

Diagnostic Test

Check for normality of the disturbances: **Skewness/Kurtosis tests for normality:**

. sktest resid1

Skewness/Kurtosis tests for Normality

				joint	
Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
resid1	140	0.3830	0.6609	0.97	0.6165

Since p-value (0.6165) is > 0.05, we fail to reject the null hypothesis, implying that residuals are normally distributed

Diagnostic Test

Check for Heteroscedasticity:

. gen resq=resid1*resid1

. regress resq emp_exp emp_ten emp_rol emp_learn

Source	SS	df	MS		
Model	5.59275187	4	1.39818797	Number of obs	= 140
Residual	193.279656	135	1.43170116	F(4, 135)	= 0.98
Total	198.872408	139	1.43073675	Prob > F	= 0.4226
				R-squared	= 0.0281
				Adj R-squared	= -0.0007
				Root MSE	= 1.1965

resq	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
emp_exp	-.0129965	.0192342	-0.68	0.500	-.0510358	.0250428
emp_ten	.0362983	.0256902	1.41	0.160	-.014509	.0871056
emp_rol	-.0712644	.055895	-1.27	0.205	-.1818075	.0392786
emp_learn	.0095259	.0064942	1.47	0.145	-.0033177	.0223695
_cons	.3820472	.4892371	0.78	0.436	-.5855133	1.349608

. regress emp_ejsi emp_exp emp_ten emp_rol emp_learn

Source	SS	df	MS		
Model	221.389095	4	55.3472738	Number of obs	= 140
Residual	116.152262	135	.860387126	F(4, 135)	= 64.33
Total	337.541357	139	2.42835509	Prob > F	= 0.0000
				R-squared	= 0.6559
				Adj R-squared	= 0.6457
				Root MSE	= .92757

emp_ejsi	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
emp_exp	-.0414806	.0149106	-2.78	0.006	-.0709692	-.0119921
emp_ten	-.0405943	.0199154	-2.04	0.043	-.0799808	-.0012079
emp_rol	-.0116725	.0433305	-0.27	0.788	-.0973668	.0740219
emp_learn	.0492776	.0050344	9.79	0.000	.0393211	.0592342
_cons	94.05748	.3792627	248.00	0.000	93.30741	94.80754

Diagnostic Test

Check for Heteroscedasticity: **Breusch-Pagan / Cook-Weisberg test for heteroskedasticity**

. estat hettest

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of emp_ejsi

         chi2(1)      =     0.66
         Prob > chi2  =   0.4176
```

Since p-value is > 0.05, the null cannot be rejected and heteroskedasticity is not present

Diagnostic Test

Check for Auto correlation:

. gen t=_n

. tsset t

```
. tsset t
        time variable:  t, 1 to 140
                delta:  1 unit
```

. dwstat

```
Durbin-Watson d-statistic(  5,   140) =  2.019228
```

Since the value is 2.019, which is almost around 2, it implies that implies that data does not have autocorrelation

Diagnostic Test

Check for Multicollinearity:

.pwcorr emp_ejsi emp_exp emp_ten emp_rol emp_learn

	emp_ejsi	emp_exp	emp_ten	emp_rol	emp_le~n
emp_ejsi	1.0000				
emp_exp	-0.5463	1.0000			
emp_ten	-0.6232	0.7120	1.0000		
emp_rol	-0.1659	0.2364	0.3340	1.0000	
emp_learn	0.7520	-0.3834	-0.5291	-0.0831	1.0000

. estat vif

Variable	VIF	1/VIF
emp_ten	2.59	0.386233
emp_exp	2.03	0.492935
emp_learn	1.41	0.710075
emp_rol	1.14	0.876312
Mean VIF	1.79	

Mean VIF = 1.79 which is greater than 1 but less than 5, but further towards 1, so no co-relation between the explanatory variables

Now, we have performed Round 2 Run to make the result more fine-tuned. Following is the analysis:

Run 2: Re-ran the regression by taking the log - remove the outliers to take care of autocorrelation

We have taken Log of the emp_ejsi.

. gen lemp_ejsi=log(emp_ejsi)

. reg lemp_ejsi emp_exp emp_ten emp_rol emp_learn

Source	SS	df	MS	Number of obs	=	140
				F(4, 135)	=	64.05
Model	.024215219	4	.006053805	Prob > F	=	0.0000
Residual	.01275922	135	.000094513	R-squared	=	0.6549
				Adj R-squared	=	0.6447
Total	.036974439	139	.000266003	Root MSE	=	.00972

lemp_ejsi	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
emp_exp	-.000431	.0001563	-2.76	0.007	-.00074	-.0001219
emp_ten	-.0004381	.0002087	-2.10	0.038	-.0008509	-.0000253
emp_rol	-.0001126	.0004541	-0.25	0.805	-.0010108	.0007855
emp_learn	.0005126	.0000528	9.71	0.000	.0004082	.0006169
_cons	4.544119	.003975	1143.17	0.000	4.536257	4.55198

- R squared – 65% of the variance in emp_ejsi can be predicted from other variables – emp_exp, emp_ten, emp_rol, emp_learn.
- Adjusted R-squared – Adjusted for number of predictors in the model
- Root MSE – Standard Deviation of Error / Residuals (Closer it is to zero, better is the fit) – Since the error reduces from 0.9275 to 0.0097, it implies that this model is now a good fit

. predict lresid, resid

. mean(lresid)

Mean estimation Number of obs = 140

	Mean	Std. Err.	[95% Conf.	Interval]
lresid	7.06e-12	.0008097	-.001601	.001601

. jb lresid

```
. jb lresid
Jarque-Bera normality test:  .9817 Chi(2)  .6121
Jarque-Bera test for Ho: normality:
```

Since p-value (0.05) < Chi(2) (0.612) , we fail to reject null hypothesis, implying that residuals are normally distributed.

. reg lemp_ejsi emp_exp emp_ten emp_rol emp_learn

Source	SS	df	MS	Number of obs	=	140
				F(4, 135)	=	64.05
Model	.024215219	4	.006053805	Prob > F	=	0.0000
Residual	.01275922	135	.000094513	R-squared	=	0.6549
				Adj R-squared	=	0.6447
Total	.036974439	139	.000266003	Root MSE	=	.00972

lemp_ejsi	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
emp_exp	-.000431	.0001563	-2.76	0.007	-.00074	-.0001219
emp_ten	-.0004381	.0002087	-2.10	0.038	-.0008509	-.0000253
emp_rol	-.0001126	.0004541	-0.25	0.805	-.0010108	.0007855
emp_learn	.0005126	.0000528	9.71	0.000	.0004082	.0006169
_cons	4.544119	.003975	1143.17	0.000	4.536257	4.55198

Cook’s Distance is a statistical measure used to identify influential data points that can unduly influence the outcome of a regression analysis. It is used to identify potential outliers in the data set. A Cook's Distance value of greater than 0.5 is typically considered high, indicating that the corresponding data point is exerting a strong influence on the regression analysis. A Cook's Distance

value greater than 1 is considered extreme, indicating that the data point is an outlier and may need to be removed from the analysis.

.. predict cooksd, cooksd

. sum cooksd

Variable	Obs	Mean	Std. Dev.	Min	Max
cooksd	140	.0078233	.0135495	5.82e-08	.0757535

. gen lev_point=1 if cooksd> 3*r(mean)

(123 missing values generated)

. browse if lev_point==1

. drop if lev_point==1

(17 observations deleted)

We see mean distance of errors are very less, so maybe we will have very few outliers.

We drop 17 observations after predicting Cooks distance and removing variables having cook's distance greater than 3 times the mean. Again, running regression with 123 observations.

. reg lemp_ejsi emp_exp emp_ten emp_rol emp_learn

Source	SS	df	MS		
				Number of obs	= 123
				F(4, 118)	= 93.37
Model	.021145179	4	.005286295	Prob > F	= 0.0000
Residual	.006680696	118	.000056616	R-squared	= 0.7599
				Adj R-squared	= 0.7518
Total	.027825875	122	.000228081	Root MSE	= .00752

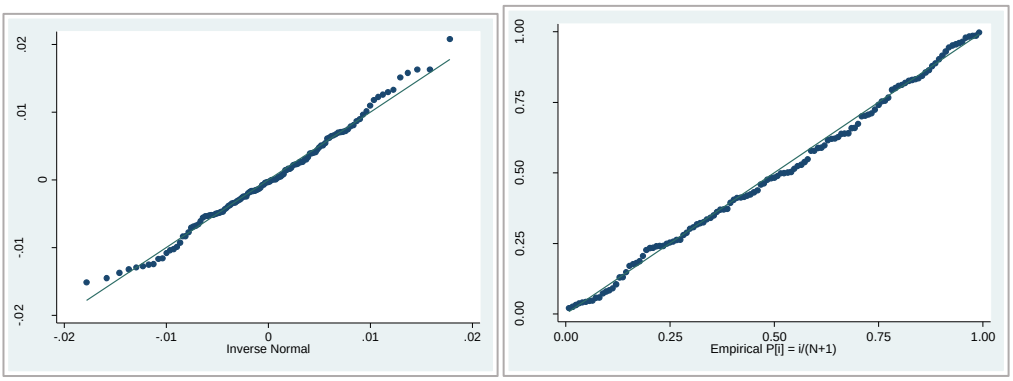
lemp_ejsi	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
emp_exp	-.0005625	.0001401	-4.02	0.000	-.0008398	-.0002851
emp_ten	-.0003392	.0001803	-1.88	0.062	-.0006963	.0000179
emp_rol	-.0003353	.0004095	-0.82	0.415	-.0011463	.0004756
emp_learn	.0005324	.0000453	11.76	0.000	.0004427	.000622
_cons	4.545408	.0034109	1332.60	0.000	4.538654	4.552163

Final Test : conduction tests for normality, heteroscedasticity, auto correlation and multicollinearity

. predict llresid, resid

.qnorm llresid

.pnorm llresid



. jb llresid

```
Jarque-Bera normality test:  1.277 Chi(2)  .5281
Jarque-Bera test for Ho: normality:
```

Since p-value (0.05) < Chi(2) (0.528) , we fail to reject null hypothesis, implying that residuals are normally distributed

. estat hettest

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of lemp_ejsi

         chi2(1)      =     0.36
         Prob > chi2  =   0.5480
```

Since p-value is > 0.05, the null cannot be rejected and heteroskedasticity is not present

Since p-value (0.05) < Chi(2) (0.5480) , we fail to reject null hypothesis, implying that residuals are normally distributed

. reg lemp_ejsi emp_exp emp_ten emp_rol emp_learn

Source	SS	df	MS	Number of obs	=	123
				F(4, 118)	=	93.37
Model	.021145179	4	.005286295	Prob > F	=	0.0000
Residual	.006680696	118	.000056616	R-squared	=	0.7599
				Adj R-squared	=	0.7518
Total	.027825875	122	.000228081	Root MSE	=	.00752

lemp_ejsi	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
emp_exp	-.0005625	.0001401	-4.02	0.000	-.0008398	-.0002851
emp_ten	-.0003392	.0001803	-1.88	0.062	-.0006963	.0000179
emp_rol	-.0003353	.0004095	-0.82	0.415	-.0011463	.0004756
emp_learn	.0005324	.0000453	11.76	0.000	.0004427	.000622
_cons	4.545408	.0034109	1332.60	0.000	4.538654	4.552163

. reg lemp_ejsi emp_exp emp_ten emp_rol emp_learn, robust

```
Linear regression                               Number of obs     =        123
                                                F(4, 118)         =      98.60
                                                Prob > F          =     0.0000
                                                R-squared         =     0.7599
                                                Root MSE          =     .00752
```

lemp_ejsi	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
emp_exp	-.0005625	.0001155	-4.87	0.000	-.0007913	-.0003337
emp_ten	-.0003392	.0001581	-2.15	0.034	-.0006523	-.0000262
emp_rol	-.0003353	.0003561	-0.94	0.348	-.0010404	.0003698
emp_learn	.0005324	.0000412	12.91	0.000	.0004507	.000614
_cons	4.545408	.0028976	1568.68	0.000	4.53967	4.551146

. gen tt=_n

. tsset tt

```
. tsset tt
        time variable:  tt, 1 to 123
                delta:  1 unit
```

. dwstat

```
Durbin-Watson d-statistic(  5,   123) =   2.02443
```

Since the value is 2.024, which is almost around 2, it implies that implies that data does not have autocorrelation

. pwcorr lemp_ejsi emp_exp emp_ten emp_rol emp_learn

	lemp_e~i	emp_exp	emp_ten	emp_rol	emp_le~n
lemp_ejsi	1.0000				
emp_exp	-0.6025	1.0000			
emp_ten	-0.6640	0.7032	1.0000		
emp_rol	-0.1484	0.1552	0.2996	1.0000	
emp_learn	0.8057	-0.3873	-0.5316	-0.0453	1.0000

. estat vif

Variable	VIF	1/VIF
emp_ten	2.58	0.387473
emp_exp	1.99	0.502057
emp_learn	1.42	0.703077
emp_rol	1.13	0.886528
Mean VIF	1.78	

Mean VIF = 1.78 which is greater than 1 but less than 5, but further towards 1, so no co-relation between the explanatory variables
Hence, we can say there is: No Auto correlation and no multicollinearity

Our Linear regression model based on data:

Log (emp_ejsi) = 4.545408 - 0.0005625 * (emp_exp) - 0.0003392 * (emp_ten) - 0.0003353 * (emp_rol) + 0.0005324 * (emp_learn) + (residual)

Analysis Result Summary: Gunasekaran and Ngai (2004) argue that one of the primary benefits of digitalization is increased decentralization of value-adding activities. While financial and partner relationship-oriented benefits are important, organizations must also consider the perspective of employee engagement, effectiveness, and satisfaction when implementing BPM-based digital transformation. Lowes et al. (2015) found that companies that implement automation can increase the efficiency, satisfaction, and effectiveness of their workforce, and as automation engagement continues to grow, the dependency on highly skilled process owners increases rather than decreasing. According to a survey by Pegasystems, global executives believe that digital transformation can improve employee satisfaction by 42%, and as a result, employees can be assigned to handle more complex tasks and strategic responsibilities (Lowes & Cannata, 2017; Monahan, 2017; Van As, 2018). The benefits of digital transformation also include faster processing and reduced errors, which can enhance the overall employee experience (J.L. Hartley, W.J. Sawaya, 2019). Moreover, it can automate manual tasks and perform them faster than humans, allowing employees to focus on more valuable and challenging work (Asatiani et al., 2016; Alberth et al., 2017). The implementation of digital transformation can lead to more engaging and motivating work for employees by allowing them to take on higher value tasks that better utilize their intelligence, engagement, and creativity. However, organizations often encounter challenges related to employees' resistance to change when introducing new technological changes (Basyal & Seo, 2017). Resistance can be described as a mental state indicating a lack of willingness or openness to changing one's thoughts and behaviors, as defined by Makina and Keng'ara (2018), or as a negative response related to change that involves any kind of action or behavior intended to hinder or impede the implementation of change, as defined by Oreg, Vakola, and Armenakis (2011). In addition, the outcomes of employees' opposition to change consist

of various negative consequences, such as increased employee misconduct, delays in the change process leading to higher costs, decreased productivity, higher employee turnover, disruption and difficulties in the change program, failure to implement changes, and in extreme cases, the breakdown or destabilization of the organization (Nograšek, 2011). Workers may anticipate increased workloads, fear further change, and experience deterioration of workplace relationships as a result of technology changes (Smollan, 2016). They may also lack trust in management capabilities and have a misunderstanding of the need for change (Dobrovič & Timková, 2017), fear job loss or being transferred to another position or location (Cheng & McCarthy, 2018), and fear of degradation. According to Arasli et al. (2014), long tenure has a positive relationship with job satisfaction. Additionally, Karen (2007) found that two individual-level characteristics, namely openness to job changes and organizational tenure, were significantly related to resistance to change. In the context of HRD, digital dexterity, which includes personal innovativeness, self-efficacy, and technological self-efficacy, plays a critical role in the success of digital transformation (Ahmed et al., 2020). The focus areas of a digital transformation framework include capability, talent, and skill development (Wenzel, 2021). One of the important overarching goals for organizations is to accelerate organizational learning and innovation during digital transformation, in order to succeed in a digital economy (Seufert & Meier, 2016). The adoption of new technologies and practices can be a source of excitement or reluctance for organizations, and one important aspect of this is the learning curves and training required (Antonizzi et al., 2020). A series of communication and training activities can help increase both individual and organizational readiness for change (Mueller & Renken, 2017).

Now based on the analysis of the empirical result, following are revealed:

Log (emp_ejsi) = 4.545408 - 0.0005625 * (emp_exp) - 0.0003392 * (emp_ten) - 0.0003353 * (emp_rol) + 0.0005324 * (emp_learn) + (residual)

emp_ejsi w.r.t **emp_exp** :: with the increase of Yrs. Of Exp of employee, satisfaction index post digitalization decreases because of probable reason of resistance to change increases with increase of yrs. Of experience. Whereas employees who are comparatively lesser experienced are much more flexible in adapting changes in process & embracing new technologies post digitalization.

emp_ejsi w.r.t **emp_ten** :: with the increase of Yrs. Of tenure of employee in current organization, satisfaction index post digitalization decreases because of probable reason of resistance to change increases with increase of yrs. Of tenure in one organization where employees are in comfort zone with existing ways of working. Whereas employees who are comparatively new in the organization are much flexible in adapting changes in process due to digitalization.

emp_ejsi w.r.t **emp_rol** :: with the increase of Yrs. Of employee in current role, satisfaction index post digitalization decreases because of probable reason of resistance to change increases with increase in apprehension with increase of yrs. Employees in current role where employees are already in comfort zone with existing ways of working in one role. Whereas employees who are comparatively new in one role are much more flexible in job fitment & rotation.

emp_ejsi w.r.t **emp_learn** :: with the increase of Hrs. of learning, satisfaction index post digitalization increases because of probable reason of proper training on impact of digitalization which helps in reducing apprehension, create awareness about values of digitalization, potential positive impacts on employee work life balance & skill improvement etc. Whereas employees who are not getting trained & having lesser Hrs. of Learning & development, still can't embrace new changes due to digitalization with open mind & have fear of losing job or issue of job fitment.

Note*: No linear regression model is perfect, we should collect more data to further check & refine the model. For present data set with original 140 data set, we came up to this model and run all regression diagnostics. After running regression diagnostics, we found that this model is confirming all Gauss-Markov assumptions of regression model.*

Research suggests that adopting digital technology to reengineer procurement processes can lead to numerous benefits, including improved cost efficiency, operational and financial performance, competitive advantage, innovation-focused employee engagement, agility, resiliency, traceability, transparency, and employee satisfaction (Koh et al., 2019; Tortorella et al., 2019; Rubbio et al., 2019; Hastig and Sodhi, 2020; Sousa-Zomer et al., 2020; Martinez et al., 2019).

LIMITATIONS & FUTURE RESEARCH DIRECTION:

Limitations & boundaries of this research work involving in-scope parameters & constructs as mentioned from the context of single case in one country is acknowledged and it is accepted that single case organization sometimes restricts generalizability of findings.

Following are the high-level research boundaries & limitations which can be addressed as future scope of broader research:

- Research is conducted on One Case from Single organization (Malaysian Case-Organization) in one country (Malaysia). Only Procurement & Sourcing area of the organization is evaluated with an overall universe of 170 employees to consider for sampling, who are directly impacted by the implementation of digital transformation. There is scope to extend the boundaries to multiple purchasing organizations across multiple geographic locations & varied industry domains.
- Impact is being measured on single aspect of Job satisfaction Index. No other employee impacts from human resource & leadership perspectives are assessed. Only top 4 impacting parameters are evaluated to assess the impact on job satisfaction while defining the regression model, which has scope to enhance further by incorporating more impacting parameters on job satisfaction.
- Sample set of interview participants from Malaysian Case-Organization Procurement division is identified based on their availability, willingness to respond and access of researcher. There is a further scope to evaluate entire organization wide analysis, or even multi organizational analysis with larger set of stakeholders' samples for gathering more data for quantitative analysis & regression model fitment.
- There is limited availability of research materials on impact of digital automation in procurement area on employee job satisfaction. Also, research has limited access to Malaysian Case-Organization specific materials & employees as this research is not endorsed or sponsored by the organization and is being done independently.
- Time limitation of the research is also considered as important factor as this research needs to adhere to stringent completion timeline. No Qualitative approach is considered while analyzing the data & purely statistical models are used to evaluate the impacts.
- Analyzing benefits on financial model of HRM and cost saving from employee job effectiveness is not taken into consideration of scope.

As this is formative stage of the research, a deliberate selection has been made to restrict the boundary & scope of research focus to a single case-oriented organization to analyze thoroughly the existence of core concepts of relationship under research propositions.

CONCLUSION:

Making a business process model successful on a long run, it needs to enable better collaboration between business and IT division, adopting the fast-evolving business condition, support rapidly varying business processes, appreciate customer demand, confirm IT objectives to be aligned with business strategic plan and be developed and implemented effortlessly with a build-for-change motto. However, the resource engagement & satisfaction analysis are missing in business process digitalization planning models in most of the cases. To ensure a successful digital implementation, it is crucial to assign appropriate activities and responsibilities to specific groups of employees who can work to improve process quality and enhance job satisfaction.

Digital transformation initiative is capable to bring a clear positive impact on employee satisfaction and on individual job performance. Despite the importance of resource engagement and satisfaction, many business process digitalization planning models neglect to include them. To ensure a successful overall digital implementation process, it is crucial to assign activities and responsibilities to the appropriate group of employees, allowing them to enhance process quality while also improving employee job satisfaction. There is a direct relationship between the organizational ability to overcome digitalization challenges like employee resistance & employee acceptance issues etc. with enhanced job satisfaction & role fitment and the overall performance of the organization, which can be analyzed in terms of both process efficiencies and organizational capabilities. Digital technologies & modernization not only support and enable processes harmonization but also enable better fitment & utilization of human resources, if factors impacting satisfactions are properly managed.

Most importantly, digital transformation has direct impact to reduce manual errors and employees can concentrate on more complex strategic and thought-provoking activities. Digital transformation has the potential to increase cost savings and transform job roles from operational to more strategic, lean, and flexible, ultimately leading to higher levels of job satisfaction. But factors like experience level, tenure in one specific organization or in one role and most importantly, the learning & skill development opportunities given to employee pre/post digitalization has lot of impacts on adoption level, acceptance level & resistance level.

According to Dunks (2000), most technological change initiatives include some form of training to help employees adapt to new situations. However, older workers in particular may resist the change because they believe it is too late for them to learn new things (Judson, 1991). Our analysis shows similar results when examining the factors that influence the outcomes of the change process. Burnes (1996) suggests that some people perceive change as diminishing their past experiences. This may explain why younger employees, who have spent less time and effort learning the old ways, are more adaptable to new ways. Therefore, skill development and awareness programs should be tailored accordingly.

Research has shown that demographic variables, such as age, gender, educational and professional qualifications, job level, and job tenure, can significantly impact an employee's job satisfaction after a merger (Chambers, 2008; Clinebell & Shadwick, 2004; Collins, 2005; Jensen & Zajac, 2004; Rhea, 2004). Therefore, these variables are essential to consider and prioritize when undergoing digital transformation. According to Childs et al. (2005), resistance to change, lack of motivation, technophobia, computer anxiety, and lack of IT confidence can be mitigated through skill development and learning opportunities. Therefore, promoting learning, skill development, cross/upskilling, and making it a part of the overall organizational vision should be a priority when planning for digital transformation.

Studies in this field suggest that digital transformation has the potential to generate cost savings and transform job roles from operational to more strategic, lean, and flexible, thereby increasing overall

job satisfaction. As a result, this area has remained an interesting focus for management researchers over the past decade.

Academic & Managerial Implications: This academic time-bound short research is intended to help Chief Procurement Officer (CPO) office to evaluate what extra value additions that the digital transformation engagement brought in Procurement & Sourcing areas from employee satisfaction perspective apart from tradition way of thinking the benefits from financial savings perspective. Overall contribution of this research is the analysis of quantitative data along with theoretical & literature support for the proposed research assertion that introduction of e-procurement enabled business transformation would play a crucial role in futuristic process automation and enhancing employee engagement & satisfaction and moreover which all parameters to influence the satisfaction level. This finding is to alert senior management to concentrate on digitalization activities, which need to be carefully managed & driven so that employee engagement, involvement and satisfaction can be achieved.

Digital transformation in procurement space can bring magical improvement in process KPIs as well as Employee engagement matrix, if the initiative is well planned and accordingly communicated effectively, augmented by employee cross skilling, training and up skilling, so that they don't feel threatened instead feel empowered to get associated with more meaningful & complex work. Thanks to digitalized procurement systems, the organizations can be able to put focus on its employees to get involved in more value-added activities which are the core parameters for the overall growth of the organization. Implementing digitalized platform offers automation of non-core repetitive activities to allow increased involvement in more meaningful non-redundant works.

This will allow procurement or any concerned team to get redeployed on more strategical actions, like contracts and compliance terms & definition. It is critical to consider the upskilling of personnel and the development & training of multi-skillsets to be able to interact with evolving digital eco system. From these definitions, it is evident that embracing digitalized sourcing process make organizations ready to achieve desired benefits that in turn can generate positive externalities for the environment and society, and positively impact on overall workplace and employees' life. End-user satisfaction is one of the most critical parameters to measure success of an information system. It is evident that the analysis of the user or employee satisfaction approach reveals the fact that higher level of satisfaction helps in higher level of employee performance. Digitized e-Procurement initiative is capable to bring clear positive impact on employee satisfaction and on individual job performance. As due to longer tenure in one job, one role or one organization make employees more resistance to change, hence without hurting their ego and sense of security, they can be reskilled, re-deployed to other meaningful role and their new movement/transition can be smoothen with better training plan, followed by rewards for faster adoption. Hence it is evident that case study based quantitaive analysis shows the impact of digital transformation is there on employee satisfaction and importantly it gets affected by few of the demographic parameters (as considered in scope for this study) as majority of the theoretical analysis & literature reviews suggest.

Future Recommendations & Conclusion: Regarding the limitations of the research work, it includes research findings that cannot be evaluated across industries & geographies so far. Therefore, additional case studies across countries & industries are to be considered to improve the validity, coverage & applicability of research findings. Moreover, the regulating & cascading effect of other contextual factors (e.g., Management Rules, Governance Models, Organization Culture, Organizational Change Management, HR Benefit & compensation etc.) have not been studied with respect to employee job satisfaction analysis & impacting factor evaluation. It may also be possible to identify other types of business stakeholders & partner relationships that may impact on job satisfaction post introduction of

digitally enabled e-sourcing systems and is needed to be further explored, along with more demographic parameters that can have impact on employee resistance or acceptance.

As a result of digitalization, employees will face transformed work activities that demand a broader range of new skills and competencies. With their tasks becoming more automated and interdisciplinary, they will need to acquire and develop skills and competencies that are technology-related, based on a solid foundation of basic skills in Information and Communication Technologies (ICT). In addition to functional and financial aspects, other important factors in the success of digital transformation are related to employees' needs, motivations, and behavioral traits. In the procurement domain, competencies that support digital transformation include leadership, communication, decision-making, business process management, critical thinking, and negotiation skills, among others. These competencies need to be integrated into various levels of procurement digitalization. To achieve this, organizations should first define job profiles that are aligned with the requirements of procurement digitalization based on demographic analysis. It is essential for organizations to support their employees in acquiring and developing the key skills necessary to perform the redefined activities that arise from digital transformation. Procurement leads, managers, and HR departments should provide guidance and support to employees as they gain and develop these competencies. Furthermore, it is crucial to ensure that the digitalization of procurement is achieved while meeting the performance criteria of the technological project in terms of time, cost, quality, and employee satisfaction. Other studies reveal that proper internal communication is having a substantial positive outcome on employee satisfaction and significantly effect internal integration, which in turn impacts external integration. In Malaysian Case-Organization scenario also, they communicated the objectives, intention, procedures very clearly early in the life cycle of the digitalization to avoid any misconception, resistance and fear or insecurity, which helped in better & smooth implementation in digital processes along with transparency & improved employee satisfaction.

Hence, based on the in-scope Malaysian Case-Organization based quantitative primary data analysis along with detailed secondary research & literature review suggests that if digital transformation can be driven by organization vision of modernization & sustainability with well-defined plan & strategy, then the impact on the employee job satisfaction will definitely be highly positive if impacting demographic parameters are carefully analyzed & accordingly planning can be done. This positive inter-relation needs to be understood, assimilated with respect to any organization’s vision, so that best outcome can be obtained and this approach and mission should be driven top-down i.e., driven by CPO office, considering the outcome value not only from the financial or process KPI improvement perspective, but from the internal employee engagement, motivation, involvement and satisfaction perspective also. At the end of the day, it is the employee who will bring the change, embrace the change, promote the change via digital transformation, and not the tool or the technology. Hence, it is crucial to measure & consider the impact of employee job satisfaction with respect to digitalization for organization’s better & brighter tomorrow.

DECLARATION:

The author of the article has disclosed that he has no conflicts of interest with regard to the research analysis, authorship, and/or publication of the article. Furthermore, he has not received any financial help for the research analysis, authorship, and/or publication of the article.

AUTHOR DETAILS:

Author Contribution: Conceived and designed the research approach; Collected the data via questionnaire; Leveraged data with statistical analysis tools; Performed the analysis; Wrote the paper.

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REFERENCES:

[1] Alas, R. and Sharifi, S., (2002). Organizational Learning and Resistance to Change. Wesley Publishing Company. London.

[2] Alberth, M. & Mattern, M. (2017). Understanding robotic process automation (RPA). Automation, pp. 54-61

[3] Antonizzi, J., Smuts, H. (2020). The Characteristics of Digital Entrepreneurship and Digital Transformation: A Systematic Literature Review. In: Hattingh, M., Matthee, M., Smuts, H., Pappas, I., Dwivedi, Y., Mäntymäki, M. (eds) Responsible Design, Implementation and Use of Information and Communication Technology. I3E 2020. Lecture Notes in Computer Science(), vol 12066. Springer, Cham. https://doi.org/10.1007/978-3-030-44999-5_20

[4] Asatiani, A., & Penttinen, E. (2016). Turning robotic process automation into commercial success – Case OpusCapita. Journal of Information Technology Teaching Cases, 6(2), 67–74.

[5] Barner, R. (1994, June). Enablement: the key to empowerment. Training & Development, 48(6), vol. 48, no. 6, June 1994, pp. 33

[6] Basyal, D.K. & Seo, J.W. (2017). Employees' resistance to change and technology acceptance in Nepal. The Journal of University Grants Commission, 6(1), 1–14.

[7] Berman, S. J. (2012). Digital transformation: opportunities to create new business models. Strategy & Leadership, 40(2), pp.16–24.

[8] Bonnet, D., & Westerman, G. (2020, November 19). The New Elements of Digital Transformation. MIT Sloan Management Review. [online], Available at: https://sloanreview.mit.edu/article/the-new-elements-of-digital-transformation/[Accessed 18-Oct-22]

[9] Burnes, B., (1996). Managing Change: Strategic approach to organizational dynamics, Pitman, London.

[10] Chambers, S. (2008). Telecommunications megamergers: Impact on employee morale and turnover intention. Dissertation Abstracts International, 69 (03), 1053. (UMI No. 3304163)

[11] Chari Felix, Chimbindi Vhuramayi, Chikozho Martin, Mapira Nyasha. (2013). Impact of Age on Employee Resistance to Change. A Case Study Cotton Company (COTTCO) in Zimbabwe. Greener Journal of Business and Management Studies ISSN: 2276-7827 Vol. 3(9), pp. 386-392, December 2013.

[12] Cheng, B. H., & McCarthy, J. M. (2018). Understanding the dark and bright sides of anxiety: A theory of workplace anxiety. Journal of Applied Psychology, 103(5), 537–560.

[13] Clinebell, S., & Shadwick, G. (2004). The importance of organizational context on employees' attitudes. Journal of Leadership & Organizational Studies, 11 (2), 89-100.

[14] Collins, G. (2005). The gendered nature of mergers. Gender, Work and Organization, 12, 270-272.

[15] Cooper, C. A. (2015). Bureaucratic identity and the resistance of politicization. Administration & Society, 50(1), 30–52. https://doi.org/10.1177/0095399715581046

[16] Curt Cranny, C. J., Smith, P. C., & Stone, E. F. (1992). Job satisfaction: How people feel about their jobs and how it affects their performance. Lexington Books: New York, NY.
[17] Dobrovič, J., & Timková, V. (2017). Examination of factors affecting the implementation of organizational changes. Journal of Competitiveness, 9(4), 5–18.
[18] Dooley, L. M. (2002). Case Study Research and Theory Building. Advances in Developing Human Resources, 4(3), 335–354. https://doi.org/10.1177/1523422302043007
[19] Dunks, S., (2000). Organizational Behavior, Prentice Hall. London.
[20] Eisenhardt, K. M., & Graebner, M. E. (2007). Theory Building From Cases: Opportunities And Challenges. Academy of Management Journal, 50(1), 25–32. https://doi.org/10.5465/amj.2007.24160888
[21] Ergeneli, G. S. Arı, and S. Metin, "Psychological empowerment and its relationship to trust in immediate managers," Journal of Business Research, Vol. 60, No.1, pp. 41-49, 2007
[22] Gill, Amarjit. (2012). The effects of job satisfaction and work experience on employee-desire for empowerment: A comparative study in Canada and India.
[23] Gunasekaran, A., & Ngai, E. W. (2004). Information systems in supply chain integration and management. European Journal of Operational Research, 159(2), 269-295.
[24] Hastig, G.M. and Sodhi, M.S. (2020), "Blockchain for supply chain traceability: business requirements and critical success factors", Production and Operations Management, Vol. 29 No. 4, pp. 935-954.
[25] Hoppock, R. (1935). Job satisfaction. Oxford, England: Harper. Pp. 75-87
[26] Huseyin Araslı, Mustafa Daşkın, Serdar Saydam,Polychronicity and Intrinsic Motivation as Dispositional Determinants on Hotel Frontline Employees' Job Satisfaction: Do Control Variables Make a Difference?, Procedia - Social and Behavioral Sciences, Volume 109, 2014, Pages 1395-1405, ISSN 1877-0428, https://doi.org/10.1016/j.sbspro.2013.12.643.
[27] Janet L. Hartley, William J. Sawaya, 2019, "Tortoise, not the hare: Digital transformation of supply chain business processes", Business Horizons (2019), 62, 707-715. Kelley School of Business, Indiana University
[28] Janice Anna Knights & Barbara Jean Kennedy. Psychological Contract Violation: Impacts on Job Satisfaction and Organizational Commitment Among Australian Senior Public Servants. Applied H.R.M. Research, 2005, Volume 10, Number 2, pages 57-72
[29] Jensen, M., & Zajac, E. (2004). Corporate elites and corporate strategy: How demographic preferences and structural position shape the scope of the firm. Strategic Management Journal, 25, 507-525.
[30] Judson, H., (1991). Strategic approach to organizational dynamics, Pitman, London.
[31] Karen Van Dam, Shaul Oreg, Birgit Schyns, 2007. Daily Work Contexts and Resistance to Organisational Change: The Role of Leader–Member Exchange, Development Climate, and Change Process Characteristics. IAAP Applied Psychology Journal. November 2007 https://doi.org/10.1111/j.1464-0597.2007.00311.x
[32] Katja Wenzel. 2021. Management Models of Digital Transformation - Analysis and Definition of Success Factors for the evelopment of a Management Framework. Springer Nature. ISBN 978-3-658-36157-0
[33] Koh, L., Orzes, G. and Jia, F.J. (2019), "The fourth industrial revolution (Industry 4.0): technologies disruption on operations and supply chain management", International Journal of Operations and Production Management, Vol. 39 Nos 6/7/8, pp. 817-828.
[34] Legard, R., Keegan, J. and Ward, K. (2003) In-depth Interviews. In: Richie, J. and Lewis, J., Eds., Qualitative Research Practice, Sage, London, 139-168.

[35] Llorens, F.J., Ruiz, A. &Molina, L. M. (2013). An analysis of the relationship between quality and perceived innovation: the case of financial firms. Industrial Management & Data Systems,103(1), pp. 579-590.

[36] Locke, E. A. (1969). What is job satisfaction? Organizational Behavior & Human Performance, 4(4), 309–336. [online], Available at: https://doi.org/10.1016/0030-5073(69)90013-0 [Accessed 24-Nov-21]

[37] Locke, E.A. (1976). The nature and causes of job satisfaction. In M.D. Dunnette (Ed.), Handbook of industrial and organizational psychology (pp.1297-1349). Chicago: Rand McNally.

[38] Locke, E.A. (1976). The nature and causes of job satisfaction. In M.D. Dunnette (Ed.), Handbook of industrial and organizational psychology (pp.1297-1349). Chicago: Rand McNally.

[39] Locke, Edwin. (1969). What is Job Satisfaction? Organizational Behaviour and Human Performance. 4. 309-336. 10.1016/0030-5073(69)90013-0. [online], Available at: https://www.researchgate.net/publication/232338370_What_is_Job_Satisfaction [Accessed 27-Nov-22]

[40] Lowes, P., & Cannata, F. R. S. (2015). Automate this: The business leader's guide to robotic and intelligent automation. Deloitte.

[41] Lowes, P., Cannata, F. R., Chitre, S., and Barkham, J. (2017). Automate this-The business leader's guide to robotic and intelligent automation. Deloitte. Service Delivery Transformation. pp. 1-21.

[42] Lynham, S. A. (2002). The General Method of Theory-Building Research in Applied Disciplines. Advances in Developing Human Resources, 4(3), 221–241. https://doi.org/10.1177/1523422302043002

[43] Maaja, V., (2004). Organizational culture and Values, Research areas. Tartu University. Management Advisory Committee. (1999). Organizational Renewal, APSC. Australia.

[44] Makina, I., & Keng'ara, R. (2018). Managing strategic change of an organization's performance: A case study of Nzoia sugar company, Kenya. Universal Journal of Management, 6(6), 198–212.

[45] Martinez, V., Zhao, M., Blujdea, C., Han, X., Neely, A. and Albores, P. (2019), "Blockchain-driven customer order management", International Journal of Operations and Production Management, Vol. 39 Nos 6/7/8, pp. 993-1022.

[46] Matzler, K., & Renzl, B. (2006). The relationship between interpersonal trust, employee satisfaction, and employee loyalty. Total Quality Management and Business Excellence, 17(10), pp.1261–1271.

[47] Millar, C., & Millar, C. (2012). Sustainability and the need for change: Organisational change and transformational vision. Journal of Organizational Change Management, 25(4), 489–500. https://doi.org/10.1108/09534811211239272

[48] Mittal, S. (2012). Managing employee resistance to change a comparative study of Indian organizations and MNCs in Delhi – NCR region. International Refereed Research Journal, 3(4), 64–71.

[49] Monahan, S. T. (2017). You can get anything you want at Alexa's restaurant: Emerging digital technologies foreshadow a future where you can "get anything you want". Supply Chain Management Review, 21(5), pp. 66-67

[50] Muath Eleswed, Fatema Mohammed (2013). The Impact of Gender, Age, Years of Experience, Education Level, and Position Type on JobSatisfaction and Organizational

Commitment: An Exploratory Study in the Kingdom of Bahrain. International Journal of Business and Social Science Vol. 4 No. 11; September 2013

[51] Mueller, Benjamin and Renken, Uta, "Helping Employees to be Digital Transformers – the Olympus.connect Case" (2017). International Conference on Information Systems (ICIS) 2017 Proceedings. 5. http://aisel.aisnet.org/icis2017/PracticeOriented/Presentations/5

[52] Nograšek, J. (2011). Change management as a critical success factor in e-government implementation. Business Systems Research, 2(2), 13–24.

[53] Oreg, S., Vakola, M., & Armenakis, A. (2011). Change recipients' reactions to organizational change: A 60-year review of quantitative studies. Journal of Applied Behavioral Science, 47(4), 461–524.

[54] Patton, M. (1990). Qualitative evaluation and research methods (pp. 169-186). Beverly Hills, CA: Sage

[55] Patton, M. Q. (2002). Qualitative research and evaluation methods (3rd ed.). Thousand Oaks, CA: Sage.

[56] Rhea, T. (2004). Organizational change in community colleges: Perceptions of a merger. Dissertation Abstracts International, 66 (02). (UMI No. 3163570)

[57] Riitta-Liisa Larjovuori, Laura Bordi, Kirsi Heikkilä-Tammi. Leadership in the digital business transformation. Mindtrek '18: Proceedings of the 22nd International Academic Mindtrek ConferenceOctober 2018 Pages 212–221https://doi.org/10.1145/3275116.3275122

[58] Robbins, S.P., (2003). Organizational Behavior, Prentice Hall, New Delhi.

[59] Robert Hoppock, Samuel Spiegler, (1935–1937), "Job Satisfaction". [online], Available at: https://doi.org/10.1002/j.2164-5892.1938.tb00348.x [online], [Accessed 24-Nov-22]

[60] Rosnowski, M. & Hulin, C. (1992). The scientific merit of valid measures of general constructs with special reference to job satisfaction and job withdrawal. In C.J. Cranny, P. C. Smith & E. F. Stone (Eds.). Job satisfaction: How people feel about their jobs and how it affects their performance. Lexington Books: New York, NY.

[61] Rubbio, I., Bruccoleri, M., Pietrosi, A. and Ragonese, B. (2019), "Digital health technology enhances resilient behaviour: evidence from the ward", International Journal of Operations and Production Management, Vol. 40 No. 1, pp. 34-67.

[62] S. Childs, E. Blenkinsopp, A. Hall, G. Walton. Effective e-learning for health professionals and students-barriers and their solutions. A systematic review of the literature-findings from the HeXL project Health Informaion & Libraries Journal, 22 (s2) (2005 Dec), pp. 20-32

[63] Saunders, M., Lewis, P. and Thornhill, A. (2009). Research methods for business students. 5th edition. Harlow: Prentice Hall.

[64] Seufert, S., & Meier, C. (2016). From eLearning to Digital Transformation: A Framework and Implications for L&D. International Journal of Advanced Corporate Learning (iJAC), 9(2), pp. 27–33. https://doi.org/10.3991/ijac.v9i2.6003

[65] Shaheen, Musarrat & Pradhan, Sudeepta & Ranajee, Ranajee. (2019). Sampling in Qualitative Research. 10.4018/978-1-5225-5366-3.ch002.

[66] Smith, E. R., (1994). Procedural knowledge and processing strategies in social cognition. Handbook of social cognition. Research Triangle Institute. Hillsdale.

[67] Smith, P. C., Kendall, L. M., & Hulin, C. L. (1969). The measurement of satisfaction in work and retirement: A strategy for the study of attitudes. Rand Mcnally.

[68] Smollan, R. K. (2016). The personal costs of organizational change: A qualitative study. Public Performance & Management Review, 39(1), 223–247.

[69] Sousa-Zomer, T.T., Neely, A. and Martinez, V. (2020), “Digital transforming capability and performance: a microfoundational perspective”, International Journal of Operations and Production Management, Vol. ahead-of-print No. ahead-of-print.

[70] Spector, P. E. (1985). Measurement of human service staff satisfaction: Development of the job satisfaction survey. American Journal of Community Psychology, 13, pp. 693-713.

[71] Spector, P. E. (1985). Measurement of human service staff satisfaction: Development of the job satisfaction survey. American Journal of Community Psychology, 13, pp. 693-713.

[72] Spector, P. E. (1997). Job satisfaction: Application, assessment, causes, and consequences. SAGE Publications, Inc., https://dx.doi.org/10.4135/9781452231549

[73] Struijs, P. C. (2012). Resistance to organizational change: The effect on job satisfaction and turnover intention and the moderating effect of emotion regulation strategies. Tilburg University. Luettavissa: http://arno. uvt. nl/show. cgi.

[74] Suri, H. (2007). Expanding possibilities within research syntheses: A methodologically inclusive research synthesis framework. Unpublished PhD thesis. Melbourne: The University of Melbourne.

[75] Suri, H. (2011), "Purposeful Sampling in Qualitative Research Synthesis", Qualitative Research Journal, Vol. 11 No. 2, pp. 63-75. https://doi.org/10.3316/QRJ1102063

[76] Tortorella, G.L., Giglio, R. and van Dun, D.H. (2019), “Industry 4.0 adoption as a moderator of the impact of lean production practices on operational performance improvement”, International Journal of Operations and Production Management, Vol. 39 Nos 6/7/8, pp. 860-886.

[77] Trisnawati, Isnarti & Erari, Anita & Aisyah, Siti. (2022). Effects of Demographic Factors, Compensation, Job Satisfaction on Organizational Commitment (A Study on the Inspectorate Office of Merauke and Boven Digoel Regency). Britain International of Humanities and Social Sciences (BIoHS) Journal. 4. 177-193. 10.33258/biohs.v4i2.648.

[78] Valentina (Dardha) Ndou. E – GOVERNMENT FOR DEVELOPING COUNTRIES: OPPORTUNITIES AND CHALLENGES. The Electronic Journal on Information Systems in Developing Countries, 18, 1, 1-24

[79] Victor H Vroom, "Work and motivation", Malabar, Fla.: R.E. Krieger Pub. Co., 1982.

[80] Waqas Ahmed, Sheikh Muhamad Hizam & Ilham Sentosa (2022) Digital dexterity: employee as consumer approach towards organizational success, Human Resource Development International, 25:5, 631-641, DOI: 10.1080/13678868.2020.1835107

[81] Wharton, A.S., Rotolo, T. & Bird, S.R. Social Context at Work: A Multilevel Analysis of Job Satisfaction. Sociological Forum 15, 65–90 (2000). https://doi.org/10.1023/A:1007546120560

[82] Yvonne Giordano (2003). Conduire un projet de recherche. Une perspective qualitative. Editions Management et Société, pp.318, 2003. ⟨halshs-00440011⟩