A Mixed Model Approach for Identifying the Impact of Soft Productivity Factors on Employee Turnover among Information Technology Employees in Sri Lanka

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ABSTRACT

Employee turnover has become one of the major issues in the IT industry today; especially, the productivity of an organization is deeply related to the employee turnover rate. The objectives of the current study are to investigate the basic factors that affect employee turnover, examine the relationships between selected soft productivity factors with employee turnover, and suggest ways of minimizing employee turnover rates in IT companies. Initially, eleven soft productivity factors are considered. The selected factors are categorized into two different categories workplace environment and employee capability and experience. In the first phase of analysis, the descriptive research approach was followed and data was collected from 150 IT professionals currently employed in IT companies in Sri Lanka, using a structured questionnaire. According to the results, a strong positive relationship can be seen between (0.676) working environment, (0.789) employees’ capabilities
and experience, (0.881) collaboration among employees, (0.891) career development opportunities, and (0.774) learning opportunities concerning employee turnover. Further, lack of sufficient telecommunication facilities, tools, and development resources, the friendly working environment also effects on retaining of employees.

Keywords: Employee turnover, IT industry, working environment, Employee capabilities

1 Introduction

In the modern world, Information Technology (IT) has become one of the most competitive industries that have moved to utilize modern technologies to improve their business processes; especially industries in the IT sector have been rapidly changing with the innovation of technologies, customer requirements, and business environments to sustain proper quality under real-world circumstances (Chowdhury et al., 2017).

Several factors have been directly affecting the productivity of an organization. Among them, employee turnover is a significant factor that is considered to be a major challenging issue in the modern world today (Boxall et al., 2018). According to the definition, employee turnover is a comparison ratio of the number of employees an organization should replace in a given period (Tambunan, 2017). However, due to local as well as global demand for high-skill professionals, employee turnover has created a major issue in the IT industry today (Chiu and Francesco, 2023); especially, many employees after being well-trained and having rich top-level knowledge of the particular skills, leave the company with the intention of having better opportunities, which creates one of the major issues in the IT industry today (Lambert et al., 2021).

Theoretically, the high turnover rate of the company may be harmful to its productivity if skilled employees leave frequently and the worker population contains a high percentage of novice employees (Lee and Mitchell, 2016; Lambert et al., 2021; Zhao et al., 2022; Shahzad et al., 2018) state that the high rate of turnover positively influences to decrease in the productivity of the company (Zhao et al., 2022).

The experience levels and skills of employees are some of the major factors which are considered. According to the literature, very few studies have been done related to examining employee turnover and related matters in the IT industry in Sri Lanka. By representing small, medium, and large IT industries, the workforce survey done by the Information and Communication Technology Agency of Sri Lanka (ICTA) found that the ICT workforce in Sri Lanka is relatively young and aged nearly 20-30. Furthermore, they have emphasized that workforce with 67% of employees have five or less number of years of experience (ICTA, 2020). Indeed, the finding identified that
58% of the workforce need a high necessity of improving the complementary soft skills of ICT workers along with core knowledge and technical skills, communication skills, teamwork, and creative thinking abilities (ICTA, 2020). Furthermore, they have described that most employers have expressed their willingness to recruit fresh graduates who are graduating from local and international Universities to ICT companies has been increasing the attrition of work from 9.9% to 14% respectively from 2013 to 2022 (ICTA, 2020).

The youth literacy level of Sri Lanka has reached over 98% level (ICTA, 2020). Currently, most students are attentive to pursue their higher studies in this globalized, innovative subject. Indeed, both government and private universities are continuously producing new IT-qualified graduates. Furthermore, IT companies have been building a knowledgeable workforce by absorbing qualified employees. However, employee experience level is the most significant factor in the industry to maintain a great demand and sustain good positions.

The main objective of this study is to identify the most significant factors that affect employee turnover in the IT industry in Sri Lanka. We believe that pinpointing the factors contributing to employee resignations will significantly enhance industry development. Therefore the main purpose is to identify the actual reasons behind turnover and its damaging effects on the productivity of the IT industry in Sri Lanka. This can have a wide range of causes.

The other objectives are as follows.

- To identify the factors affecting the employee turnover of the IT industry in Sri Lanka
- To identify how they will impact the employee turnover of the IT industry in Sri Lanka
- To identify how should the effective factors be handled to decrease turnover retention

This paper is organized as follows. The first chapter is the introduction part that presents the overview of the study, statement of the problem, turnover and productivity, hypothesis and research model, objectives, research problems, and limitations of the study. The second chapter comes up discusses the research method, research design, data collection method, and tools. The results of the study and a discussion of the results are presented in chapter three. Finally, chapter four presents the conclusion and recommendations.

2 Methodology

This research study is going to investigate the relationships between selected soft productivity factors that affect employee turnover in the IT industry in
Sri Lanka. Nevertheless, the repetitive nature of the company’s tasks seems to prompt workers to seek turnover from their positions. So, this study explores how organizational management can mitigate the impact of these factors to attain optimal organizational performance.

2.1 Research Model

The research model is essential to make sure of the objectives of the study and to build the most relevant hypotheses for the study. As a practice, all the significant factors under the study are reviewed (Muchinsky and Tuttle, 2019; Rathnayaka, 2014; Mobley, 1997; Steel and Ovalle, 1984).

The framework in Figure 1 shows the model of the research and the relationships between selected variables. Eight major factors were considered in the study and six out of them were considered as basic factors of employee turnover. Those are; Working Environment, Employee Capabilities and Experience, Unfair Management, Uncompensated Salary, Collaboration with Employees, Career Development, Promotion Mechanism, and Learning Opportunities. Working Environment and Employee Capability and Experience are further divided into sub-factors.

2.2 Requirement Analysis: Study Population

In this study, data was collected from Sri Lankan employees who are working in IT organizations without considering their employee capacity sizes such as small, medium, or large. The major data collection method used in the study was a questionnaire survey. The data collection was mainly carried out through questionnaires and surveys developed through internet-based online questionnaires. Questionnaires were distributed through email and social media networks.
To collect data on employees’ intentions to depart from their respective organizations, a sample of 150 respondents from top-level IT companies in Sri Lanka participated in a self-administered questionnaire. This sample included systems designers, senior systems analysts, systems analysts, IT coordinators, and IT managers. The participants were selected based on the stratified sampling approach.

### 3 Results and Discussion

#### 3.1 Reliability Testing

Before the questionnaires were distributed, it was very critical to ensure the validity and reliability of the questions to get the most relevant and accurate data from the respondents. Therefore reliability is tested before collecting the data to filter the most valid questionnaire. Cronbach’s Alpha serves as an indicator of internal consistency, gauging the degree to which a set of items are interrelated as a cohesive unit. Additionally, it is widely recognized as a measure of scale reliability. Table 1 shows the result of Cronbach’s Alpha test and shows that the selected dimensions have relatively high internal consistency.

#### 3.2 Data Presentation: Demographic Background of the Respondents
Out of all the respondents who participated in the questionnaire, most of them were male respondents (81%). According to the questionnaire, Employees’ age was grouped into five categories as; below 25, between 25-35, between 36-45, between 46-50, and above 50. However, all the respondent’s ages were below 45 and most of them (81.9%) were below 25. Furthermore, 94 of the respondents were single and it is nearly 89.5% out of all.

To ascertain the academic qualifications of employees, the qualification was categorized into five parts. Out of the data gathered, the majority of respondents, 132 (88.6%) were degree holders, 12 (8.1%) were diploma holders, 4 (2.6%) were Master holders and 2 (1.3%) of all respondent’s highest education level was Advanced Level. Responses from the employees indicated that the majority of the employees were software engineers and it was 82 (54.3%) out of 150 respondents. The second highest position of the employees as the responses indicated was Quality Assurance Engineers and there were 22 (14.6%) Quality Assurance Engineers and 7 Business Analysts, 6.7% as a percentage out of all.

Employees’ experience level is also considered in the study and responses were asked to indicate their experience time period in the industry. Experience of employees is categorized into five categories as; less than one year, between 1-2 years, between 3-5 years, between 6-10 years, and more than 10 years. Among them, 42.9% of employees had indicated their experience level as less than one year and 32.4% had 1-2 years of experience in the industry.

### 3.3 Behavioral Analysis and Interpretation

The questions contained in this section were related to the basic factors that were assumed to affect employee turnover. The questions are selected based on the eight basic factors that were assumed to affect employee turnover. The results gained from the Chi-square test, related to eight basic factors are shown below in Table 2. The Hypotheses that were built for correlation testing are tested to check the association between considering variables.

According to Table 2 results gained from chi-square tests, selected all hypotheses are accepted under the 0.05 level of significance. According to the results, a strong positive relationship can be seen between (0.676) working environment, (0.789) employees’ capabilities and experience, (0.881) collaboration among employees, (0.891) career development opportunities, and (0.774) learning opportunities concerning employee turnover.

### 3.4 Organizational Factors Affecting employee turnover

The conclusion summarizes the major results that can be drawn from the information presented in the article. It answers the questions raised by the original research problem or objectives of the study. When drawing conclusions, first state the main conclusion, and then any other conclusions in decreasing
Table 2: Results of chi-square test related to the basic factors of employee turnover

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Chi-square Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
<th>Results</th>
<th>Influence Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: Working Environment has a significant influence on employee turnover in IT sector</td>
<td>42.866</td>
<td>16</td>
<td>.000</td>
<td>Accepted</td>
<td>0.676</td>
</tr>
<tr>
<td>H2: Employee Capabilities and Experience has a significant influence on employee turnover in IT sector</td>
<td>43.98</td>
<td>16</td>
<td>.0012</td>
<td>Accepted</td>
<td>0.789</td>
</tr>
<tr>
<td>H3: Unfair Management has a significant influence on employee turnover in IT sector</td>
<td>51.414</td>
<td>16</td>
<td>.000</td>
<td>Accepted</td>
<td>-0.865</td>
</tr>
<tr>
<td>H4: Uncompensated Salary has a significant influence on employee turnover in IT sector</td>
<td>35.512</td>
<td>16</td>
<td>.003</td>
<td>Accepted</td>
<td>-0.763</td>
</tr>
<tr>
<td>H5: Collaboration with employees has a significant influence on employee turnover in IT sector</td>
<td>30.658</td>
<td>16</td>
<td>.015</td>
<td>Accepted</td>
<td>0.881</td>
</tr>
<tr>
<td>H6: Career Development has a significant influence on employee turnover in IT sector</td>
<td>65.641</td>
<td>16</td>
<td>.000</td>
<td>Accepted</td>
<td>0.891</td>
</tr>
<tr>
<td>H7: Promotion Mechanism has a significant influence on employee turnover in IT sector</td>
<td>62.093</td>
<td>16</td>
<td>.000</td>
<td>Accepted</td>
<td>0.802</td>
</tr>
<tr>
<td>H8: Learning opportunities has a significant influence on employee turnover in IT sector</td>
<td>30.729</td>
<td>16</td>
<td>.015</td>
<td>Accepted</td>
<td>0.774</td>
</tr>
</tbody>
</table>
Table 3: Results of chi-square test related to organizational factors affecting employee turnover

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Chi-square Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
<th>Results</th>
<th>Influence Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>H9: Workplace Condition has a significant influence on employee turnover in IT sector</td>
<td>32.727</td>
<td>16</td>
<td>.008</td>
<td>-</td>
<td>0.768</td>
</tr>
<tr>
<td>H10: E-Factor has a significant influence on employee turnover in IT sector</td>
<td>30.483</td>
<td>16</td>
<td>.016</td>
<td>Accepted</td>
<td>0.897</td>
</tr>
<tr>
<td>H11: Time Fragmentation a significant influence on employee turnover in IT sector</td>
<td>30.522</td>
<td>16</td>
<td>.015</td>
<td>Accepted</td>
<td>0.761</td>
</tr>
<tr>
<td>H12: Physical Separation a significant influence on employee turnover in IT sector</td>
<td>29.733</td>
<td>16</td>
<td>.019</td>
<td>Accepted</td>
<td>-0.752</td>
</tr>
<tr>
<td>H13: Telecommunication Facilities significant influence on employee turnover in IT sector</td>
<td>34.751</td>
<td>16</td>
<td>.004</td>
<td>Accepted</td>
<td>0.871</td>
</tr>
</tbody>
</table>

According to the chi-square tests, all hypotheses are significant at level 0.05, which means all the factors considered are strongly supported by employee turnover. The empirical results reveal that a strong positive relationship between (0.768) workplace conditions, (0.897) E-factor, (0.761) time fragmentation, and (0.871) telecommunication facilities concerning employee turnover.

3.5 Structural Equation Modeling (SEM) Approach

As the next step, Structural Equation Modeling (SEM) was used to examine the impact of soft productivity factors affecting on employee turnover in the IT industry. The SEM is generally run under the six basic steps of model...
Table 4: Model fit indices for the selected model in Figure 2

<table>
<thead>
<tr>
<th>Fit indices</th>
<th>Perfect fit</th>
<th>Accepted fit</th>
<th>Model fit results</th>
</tr>
</thead>
<tbody>
<tr>
<td>$x^2/df$</td>
<td>$x^2/df &lt; 3$</td>
<td>$3 &lt; x^2/df &lt; 5$</td>
<td>1.993</td>
</tr>
<tr>
<td>RMSEA</td>
<td>$0 &lt; \text{RMSEA} &lt; 0.05$</td>
<td>$0.05 &lt; \text{RMSEA} &lt; 0.08$</td>
<td>0.046</td>
</tr>
<tr>
<td>IFI</td>
<td>$0.95 &lt; \text{IFI} &lt; 1$</td>
<td>$0.09 &lt; \text{IFI} &lt; 0.95$</td>
<td>0.932</td>
</tr>
<tr>
<td>NNFI</td>
<td>$0.97 &lt; \text{NNFI} &lt; 1$</td>
<td>$0.095 &lt; \text{NNFI} &lt; 0.97$</td>
<td>0.965</td>
</tr>
<tr>
<td>AGFI</td>
<td>$0.90 &lt; \text{AGFI} &lt; 1$</td>
<td>$0.85 &lt; \text{AGFI} &lt; 0.9$</td>
<td>0.892</td>
</tr>
</tbody>
</table>

specifications. They are; evaluation model identification, selection of the mea-
sures and collection, preparation and screening data, and model estimation
(Zhang and Zhang, 2022). The implemented structural relationship diagram
is given in Figure 2.

In the second phase of the analysis, confirmatory factor analysis (CFA)
was carried out to determine the appropriateness and goodness-of-fit of the
proposed model.

According to the goodness of fit results in Table 4, significantly less value
of chi-square ($P < 0.05$), great values of RMSEA ($0.05 < 0.0465 < 0.08$), AGFI
($0.85 < 0.892 < 0.9$), IFI ($0.09 < \text{IFI} < 0.932$) and NNFI ($0.095 < 0.965 < 0.97$)
suggested that the estimated model is a good fit for estimating decisions. The
goodness of fit results in Table 5 revealed that the selected indices significantly
exceeded their acceptance levels and reached perfect fit levels. So as a next
step, standardized coefficients were calculated for the proposed model.

The result given in Table 6 shows that the coefficients of all selected ob-
served variables had a significant positive influence on employee turnover in
the IT industry in Sri Lanka.

The Pearson correlation coefficient matrix was prepared to examine the
relations between selected variables. Table 6 results suggested that the work-
ing environment ($r = 0.94, p < 0.01$) and Personal factors ($r = 0.828, p < 0.01$)
are strongly correlated as hypothesized. These findings are consistent with the
theoretical and empirical contribution of previous studies done by Premadasa
et al. (2019) based on various cultural frameworks.

4 Conclusion

The impact of soft productivity factors on employee turnover among Infor-
mation Technology (IT) professionals in Sri Lanka is a subject of considerable
interest and concern. Soft productivity factors encompass various intangible
elements such as job satisfaction, work-life balance, organizational culture,
and interpersonal relationships, which significantly influence employees’ de-
cisions to stay or leave their positions. Understanding the relationship between
these factors and employee turnover is vital for IT companies in Sri Lanka,
Fig. 2: SEM Model
Table 5: Maximum Likelihood Estimates for Regression Weights

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>PW</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EF</td>
<td>-.684</td>
<td>.152</td>
<td>-4.508</td>
<td>***</td>
</tr>
<tr>
<td>TF</td>
<td>-1.236</td>
<td>.215</td>
<td>-5.756</td>
<td>***</td>
</tr>
<tr>
<td>PS</td>
<td>-.435</td>
<td>.184</td>
<td>-2.367</td>
<td>.018</td>
</tr>
<tr>
<td>TEF</td>
<td>.815</td>
<td>.157</td>
<td>5.190</td>
<td>***</td>
</tr>
<tr>
<td>UM</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US</td>
<td>.027</td>
<td>.136</td>
<td>-1.95</td>
<td>.845</td>
</tr>
<tr>
<td>CE</td>
<td>.368</td>
<td>.093</td>
<td>-3.94</td>
<td>***</td>
</tr>
<tr>
<td>CD</td>
<td>1.466</td>
<td>.168</td>
<td>8.717</td>
<td>***</td>
</tr>
<tr>
<td>PM</td>
<td>-.589</td>
<td>.118</td>
<td>-4.996</td>
<td>***</td>
</tr>
<tr>
<td>DT</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC</td>
<td>2.061</td>
<td>.689</td>
<td>2.994</td>
<td>.003</td>
</tr>
<tr>
<td>PC</td>
<td>1.914</td>
<td>.643</td>
<td>2.977</td>
<td>.003</td>
</tr>
<tr>
<td>EL</td>
<td>1.769</td>
<td>.611</td>
<td>2.896</td>
<td>.004</td>
</tr>
<tr>
<td>MC</td>
<td>1.249</td>
<td>.859</td>
<td>1.455</td>
<td>.146</td>
</tr>
</tbody>
</table>

Table 6: Relationships Between Variables

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>WE</td>
<td>ET</td>
</tr>
<tr>
<td>PF</td>
<td>ET</td>
</tr>
<tr>
<td>PF</td>
<td>WE</td>
</tr>
</tbody>
</table>

given the competitive nature of the industry and the challenges associated with talent retention (Rathnayaka and Wang, 2012). By investigating the impact of soft productivity factors on employee turnover, organizations can identify strategies to enhance employee satisfaction, improve retention rates, and ultimately foster a more stable and productive workforce within the IT sector of Sri Lanka.

The study was conducted through a sampling survey using employees who were working in IT companies and there was no specification of companies to select the employees for the survey. The general objective of the study is to understand the basic factors for employee turnover in the IT industry in Sri Lanka. Furthermore, the specific objectives of the study are to understand how selected soft productivity factors affect employee turnover in the IT industry
and to measure the degree to which soft productivity factors contribute to employee turnover.

According to the results obtained 73.3% of respondents accepted that they are totally satisfied with their workplace and it seems that most employees are happy with their current workplace. 32.3% of total respondents accepted that they were not happy with their management and 36.2% of them were dissatisfied with their uncompensated salary. 70.4% of respondents completely agreed that they had good relationships with team members. Out of 105 respondents in order 54.2%, 51.4%, and 55.2% agreed that there are sufficient career development programs, promotion mechanisms, and better learning opportunities in their workplace.

As results show improper work environment, uncompensated salary, and unfair management cause employee dissatisfaction with the workplace (Rathnayaka and Wang, 2012, 2014). Further, it shows that good relationships between team members is a critical factor that makes employee retained. Furthermore, the results indicate a strong relationship between the working environment and employee turnover. Working conditions, E-factor, time fragmentation, physical separation of team members, and telecommunication facilities are significant factors in the working environment factor which impact employee intention to leave. Most employees are distributed in the same building, provided with sufficient telecommunication facilities, have good skills, and contain teams that are enriched of different skilled team members.

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