The Impact of Technology Mastery on Employee Turnover with Techostress as the Moderator

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Abstract
Employee turnover in Indonesia has a fairly high rate and technology is the influential factor for some. On the other hand, 66% of companies have been switching to digital that cause higher rate of employee turnover. Many companies experience an increase in employee turnover if technostress exists in their workforce. This research aims to examine the moderating effect of technostress on the relationship between technology mastery and employee turnover. The research model was built based on the employee perspective. Primary data was collected using questionnaires to 151 workers or employees in Semarang City. Linear regression and moderated regression analysis (MRA) were used to test the relationships. The results show that there is a negative relationship between technology mastery and employee turnover. The moderating factor of technostress takes role in influencing the relationship between technology mastery on employee turnover. This research shows how these three variables act synergistically in the model. The results helps company owners and human resource department to reduce employee turnover rates and technostress.

Keywords: technostress, employee turnover, technology mastery

INTRODUCTION

Many research conducted on employee turnover (AK, 2018; Hall, 2019; Oktanofa et al., 2022) indicate that the issue on turnover has attracted many researchers. Previous research shows that the turnover rate in Indonesia is high. A turnover is high if it is more than 10% (Pratama et al., 2022; Nurmutia et al., 2023). According to the survey of the Global Workforce, the employee turnover rate in Indonesia had reached 21% -24% per year (Amri et al., 2022). Previous research also stated that the high turnover rate was caused by technology (Brougham and Haar, 2020; Califf and Brooks, 2020; Gupta and Sharma, 2022; Malik et al., 2022). Technology can cause stress that can in turn direct the workers to resign (Yener et al., 2021; Ghosn, 2022; Hang et al., 2022).
Less than 50% of the Indonesian population master in technology. According to World Economic Forum, only 45% of the workforce in Indonesia have the ability to master the technology in the next five years (Schwab & Zahidi, 2023). Moreover, the Global Tech Report stated that 66% of companies switched to digital to get a higher return on investment (KPMG, 2022). This means that the workforce's ability to master in a technology is a crucial factor for a workforce. Malik et al. (2022) found that existence of new technology systems make workers to possibly experience system crashes, data errors, and a lack of technical support which cause frustration and stress on the workers. Workforce stress caused by a lack of technology mastery is called as technostress (Mahapatra and Pillai, 2018; Nisafani et al., 2020; Saim et al., 2021; Pansini et al., 2023).

Research on technostress has came up with different results relating to mental fatigue and work-life instability (Ma et al., 2021), job anxiety (Wu et al., 2020), minimal workforce performance (Hastuti et al., 2016; Nugraheni et al., 2022; Pansini et al. 2023), time management, and burnout (Butar-Butar, 2022; Yener et al., 2021), job conflict (Galanti et al., 2021), job overload (Abu Talib et al., 2022), and lack of job satisfaction (Pratama et al., 2022). The previous research has focused more on jobs and the effects on firms and has not yet give sufficient attention to workforce (Chen et al., 2022). In particularly, the internal factors of the workforce in relation to technology have not been studied much (Dai et al., 2021; Hampel et al., 2023). Hang et al. (2022) recommended to discuss more about technostress to fill the gap in the literature. Therefore, this research aims to examine the moderating effect of technostress on the relationship between technology mastery and employee turnover.

The use of technology can be an efficient alternative for building communication and relationships between work teams (Palgunadi et al., 2022; Octanofa et al., 2022; Putra and Sihombing 2023). However, the use of technology has resulted in several negative impacts on
the workforce. The workforce experience stress because they cannot accelerate technological
development (Kawakami et al., 2023). Technological developments mean that workers are
connected to their works wherever and whenever (Zoonen et al., 2023). They must be willing
to receive emails at outside the working hours, and receive calls from the office even when
they are at home (Muller et al., 2023).

This condition makes workers to have difficulty to divide their times between
personal and work which stresses them. Such technostress can trigger higher employee
turnover (Chan et al., 2023). Thus, this research considers the moderating role of technostress
on technology mastery and employee turnover. High technostress will strengthen the increase
in employee turnover. Otherwise, well managed technostress will increase mastery of
technology and minimize the increase of employee turnover.

This research is supported by the Job Demand Resource model (JDR) theory
(Karasek, 1979) where the theoretical model describes the imbalance of individual work
demands with the resources or facilities required. Based on the logical flow of this theory,
technostress can be avoided if facilities and human resources (HR) have adequate capabilities.
This condition will be more supportive if technology mastery is developed by the entire
workforce so that the company can reduce employee turnover rates. In this research, it is
assumed that mastery of technology is needed to avoid technostress that in turn reduce
employee turnover.

This research is intended to support literacy in addition to job training and to provide
work facilities to reduce technostress and minimize employee turnover rates. This research is
beneficial for company owners to pay more attention on workforce capabilities for reducing
technostress and avoid high employee turnover.
LITERATURE REVIEW AND DEVELOPMENT HYPOTHESES

Employee Turnover

According to (Mobley et al., 1979), employee turnover is the process where employees leave the company and their positions need to be replaced. In the global competitive condition, managing employee turnover rates is the main competitive factor for a company. Furthermore, GLA University revealed that an organization can experience a loss of 70% to 200% of the annual income due to workers turnover (Jane & Dr. Sedina, 2023). Besides increase the costs, a high employee turnover rate can cause a decrease in company productivity and performance (Haeruddin et al., 2023). Understanding the factors that influence employee turnover intentions is very important for companies that want to reduce employee turnover and maintain a stable workforce. This shows that employee turnover is important for companies to pay attention to.

Relationship between Technology Mastery and Employee Turnover

Mastery of technology is an important factor in maintaining efficiency and business continuity (Boying et al., 2023). In this modern era, technology takes an important role in all aspects of a company's operations (Hampel et al. 2023; Hastuti et al., 2017). Since mastery of technology is one of the keys to a successful business strategy (Turyadi et al., 2023), all workers must have ability to master it. Otherwise, companies can miss the opportunities, experience problems of such as employee turnover, and face threats from more advanced competitors (Hastuti et al., 2023; Jarrahi et al., 2023; Sihombing et al., 2023). Employee turnover can be detrimental to the company because it creates additional costs for new workers transfer and disrupts the company operations (Jane and Sedina, 2023).
The problems can be overcome by conducting trainings on the use of technology and selecting workers who have technological skills (Gupta & Sharma, 2022; Maretha & Warastuti, 2019; Sihombing, Narsa, et al., 2023). It can be seen that mastery of technology is one of the crucial factors needed to minimize employee turnover (Ayodele et al., 2020). The research of Rivaldo and Nabella (2023) supported that workers who have greater ability to use technology will be less pressured at their work and are unlikely to leave the company. On the other hand, workers who do not master technology will tend to be more stressed at work and thus have higher possibility to leave the company.

H1. Mastery of technology hurts employee turnover.

**Technology Mastery, Employee Turnover, and Technostress Moderation**

According to Farmania et al (2022), technology is an important tool used by the workers to do their works. Currently, a successful company is a company that can use technology effectively (Dash et al. 2022). This is the reason for mastering technology is no longer a special ability but a necessity. Mastery of technology is not only limited to computer devices but also workers’ ability to use, adapt, and manage technology (Webb & Layton, 2023). By this, dependence on the use of technology can arise and results in worker technostress. Referring to Bourlakis (2023), a good mastery of technology can increase productivity on company’s operations. Otherwise, lack of mastery of technology will lead to high levels of workers’ technostress.

According to JDR theory, job demands and job resources play role in employee satisfaction and well-being (Karasek, 1979). Technology is one of the job demands that can produce technostress if it is not supported by adequate resources such as the workers’ ability to master technology. Such ability can be facilitated by trainings, facilities, and supports to
workers (Rivaldo & Nabella, 2023). In this moderation relationship, the company's mastery of technology can help in reducing employee turnover rates. In other words, companies must pay attention to workers' ability to master technology to avoid technostress and thus minimize employee turnover.

H2. Technostress moderates the relationship between technology mastery and employee turnover.

METHOD

This research is a survey aiming at examining the influence of technology mastery on employee turnover with technostress in Semarang city. Purposive sampling was applied to select respondents from employees/workers who are directly related to the company's use of technology and the decision to stay or leave the company. This is supported by Bernard (2002) who stated that data collection using the purposive sampling method involves people who are able and willing to provide information based on their knowledge or experience. Questionnaires were distributed through the company network in Semarang that was carried out from November to December 2023. It resulted in 151 employees/workers at companies in Semarang as the respondents.

A. Measurements

This research was conducted to assess the dependent, independent variables on the moderating variable. Turnover intention as the dependent variable is used to measure the level of turnover intention in the company. There are 4 linear scale statements used to measure. The greater the score obtained, the lower the turnover rate in the company. The instrument used to measure the turnover intention variable was adopted from (Ahuja et al., 2007).
Meanwhile, the independent variable in the form of technology mastery is used to measure how much the respondent can master the technology used. There are 5 linear scale statements used in this measurement. The higher the score, the higher the respondent's ability to master technology. The instrument used to measure the technology mastery variable was adopted from (Khedhaouria, A. & Cucchi, A. 2019)

Technostress is a moderator measuring the level of stress caused by technology users in the company. There are 23 linear scale statements designed to measure moderating variables in the research. In measuring moderation, it is known that the higher the score, the greater the technostress experienced by workers. The instrument used to measure technostress moderation was adopted and modified from (Ragu-Nathan et al., 2008).

Respondents provide answers whether they agree or disagree with the statements given in the questionnaire. The questionnaire uses a Likert scale in linear form with a score of 1 indicating strongly disagree (STS) to a score of 5 indicating strongly agree (SS).

RESULTS AND DISCUSSION

Results

A. Simple Linear Regression

The first hypothesis states that mastery of technology has a negative effect on employee turnover. The results of testing the first hypothesis appear in the table below:

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E</th>
<th>R²</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>6,457</td>
<td>1,159</td>
<td>0.142</td>
<td>24,604</td>
<td>0.000</td>
</tr>
<tr>
<td>Mastery of Technology</td>
<td>-0.279</td>
<td>0.056</td>
<td></td>
<td></td>
<td>0.000</td>
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The results of testing the first hypothesis in Table 1 show that mastery of technology influences employee turnover. A negative Beta value indicates that the higher an employee's technological mastery, the lower the employee's desire to leave their job. This indicates that the more adept employees are at mastering technology, the higher the likelihood they will consider the option of leaving their jobs. Thus, the first hypothesis is accepted and these results are consistent with the research of (Rivaldo & Nabella, 2023; Sun et al., 2023).

B. Moderated Regression Analysis

The second hypothesis tests the moderating role of technostress which is thought to influence the influence of technology mastery on employee turnover. Testing this hypothesis uses Moderated Regression Analysis (MRA) and the test results are presented in Table 2 below:

| Table 2. Technostress Moderation Test Results 1 |
|-----------------|-----------------|-----------------|-----------------|
| R²              | B               | S.E             | p               |
| 0.222           | 20.251          | 1.306           | 0.00            |
| (Constant)      |                 |                 |                 |
| Mastery of Technology | -0.001          | 0.089           | 0.992           |
| Technostress    | -0.106          | 0.027           | 0.000           |

| Table 3. Technostress 2 Moderation Test Results  |
|------------------------|-----------------|-----------------|-----------------|
| R²                     | B               | S.E             | p               |
| 0.283                  | 2.841           | 5.076           | 0.577           |
| (Constant)             |                 |                 |                 |
| Mastery of Technology  | 0.835           | 0.251           | 0.001           |
| Technostress           | 0.131           | 0.072           | 0.071           |
| Technology Mastery *   | -0.011          | 0.003           | 0.001           |
| Technostress           |                 |                 |                 |

The regression results show that technostress significantly moderates the influence of technology mastery on employee turnover, with a significance value (p-value) of .001 (<.05).
This result is supported by an increase in $R^2$ from the Technology Mastery equation on Employee Turnover of 0.222 to $R^2$ in the moderation equation of 0.283, which indicates the existence of a technostress interaction. This shows that there is a strong interaction between technological mastery and the level of technostress experienced by employees in influencing the tendency to leave work. By accepting the second hypothesis, this research is in line with research that has been conducted by (Rivaldo & Nabella, 2023) and contributes to the understanding of the complex dynamics between technology mastery involved in employee turnover in the digital era.

DISCUSSION

In the context of the Job Demands Resources (JDR) theory, the difference between job demands and job resources becomes very relevant in explaining how mastery of technology affects employee turnover. JDR theory suggests that the work environment can be divided into two categories, namely job demands and job resources (Wistrianti Lestari, 2018). Job demands are aspects of work that require extra effort and can cause pressure on employees, while job resources are factors that help reduce this pressure and increase employee motivation.

In this research, technology is one aspect of job demands that can cause stress in employees, known as technostress. When employees experience high levels of technostress, this can result in increased pressure at work and increase the likelihood of turnover. However, the interesting thing is that technostress can also be seen as an indicator of an imbalance between job demand (excessive or ineffective use of technology) and job resources (the level of technological mastery that makes things easier for employees). In place, technostress weakens the negative effect of the relationship between technology mastery and employee
turnover. That is, when employees have a high mastery of technology and they feel comfortable with using technology, they tend to be more satisfied with their jobs and less likely to leave the company (Hartono, 2013). In this context, technology is not only a tool or skill that must be mastered by employees, but also a factor that influences the balance between work demands and available resources.

CONCLUSION AND IMPLICATION

This research produces two main conclusions. First, research shows that mastery of technology has a negative influence on employee turnover, which is in line with the initial hypothesis which stated a negative influence. This shows that the higher the technology mastery that employees have, the lower their tendency to consider the option of leaving their jobs. Second, hypothesis 2, which states that technostress moderates the relationship between technology mastery and employee turnover, is accepted. This shows that managing stress related to the use of technology has a significant role in regulating the influence of technology mastery on employees' decisions to stay at work. Therefore, (Sihombing et al., 2023) said that companies must pay attention not only to developing employees' technological mastery but also to psychological factors such as technostress in managing their human resources. The implications of this research are very important in developing policies and practices that are more effective in reducing employee turnover and improving employee welfare in an increasingly complex digital era.

Based on the findings of this research, several suggestions can be proposed for company owners and human resource management to reduce employee turnover rates and overcome the problem of technostress in the workplace. First, companies can increase investment in technology training aimed at improving employees' technological proficiency.
This training should not only focus on technical aspects but also provide a sufficient understanding of how to manage stress related to the use of technology (technostress).

Additionally, management needs to actively monitor and evaluate the level of technostress among their employees. Remembering how technostress can have a negative effect on employee turnover. This can be done through employee surveys, interviews, or direct observation. Based on the results of this evaluation, companies can identify areas that require further attention and implement appropriate strategies to reduce levels of technostress.

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