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BPO Employees' Adaptation to Technological Change in Dumaguete: Basis for Developing an Intervention Plan

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Abstract

This quantitative study investigates how business process outsourcing (BPO) employees in Dumaguete City, Philippines, adapt to technological change amidst the evolving demands of the digital workplace. Despite the sector's significant role in regional economic development, limited research has explored the lived realities and organizational support systems that shape employees' digital adaptation in provincial BPO hubs. Guided by a descriptive-comparative research design, the study surveyed 377 respondents from three BPO companies: Sourcescrub Philippines, ECE Contact Centers, and SOPHI Outsourcing. The research examined employees' perceptions of technological change, levels of acceptance, encountered challenges, and the extent of organizational support received. The findings showed that most employees were aware of and accepted digital transformation, but they still faced ongoing issues like feeling tired of technology, not getting enough recognition, and having limited technical skills. Notably, job designation and years of service were found to significantly influence levels of technology acceptance. These insights served as the basis for the development of a structured intervention plan aimed at promoting digital resilience, improving organizational responsiveness, and supporting sustainable workforce transformation in Dumaguete's BPO sector.

Keywords: BPO sector, digital transformation, organizational support, technological change

Introduction

Technological advancement has become a defining force in the Business Process Outsourcing (BPO) industry, reshaping work processes, employee roles, and business models. Globally, the integration of artificial intelligence (AI), automation, and data-driven technologies into BPO operations has accelerated efficiency but also increased the demand for digitally competent workers (Mariano et al., 2023; Tarafdar et al., 2021). In the Philippines, a leading BPO destination, the industry continues to be a cornerstone of economic development, employing over 1.8 million workers and projected to generate approximately $38 billion in revenue in 2024 (Reuters, 2024; The Economist Impact, 2023). Yet, as the sector evolves toward higher-value services such as financial analytics and healthcare information management, employees must rapidly adapt to new technologies and roles, often with limited preparation or support (Schumacher & Mayer, 2022).

Dumaguete City, a growing BPO hub in the Visayas, exemplifies the broader shift of outsourcing operations into provincial regions. Since its modest beginnings in 2004 with just one firm employing 45 individuals, Dumaguete has expanded to over 30 BPO companies with a combined workforce exceeding 15,000 as of 2024. This sector now contributes approximately ₱300 million to the local economy each month, driven by the city's strong academic institutions and ongoing investments in digital infrastructure (Philippine Information Agency, 2024; Outsource Accelerator, 2024). While this growth signals Dumaguete's rising importance in the country's digital economy, scholarly inquiry into how its BPO workforce is adapting to technological change remains limited. Existing studies tend to focus on Metro Manila or global outsourcing trends, often highlighting automation and workforce displacement, with little emphasis on the adaptation experiences of employees in emerging BPO hubs like Dumaguete (Nguyen et al., 2021; Sahoo & Mohapatra, 2022). This gap underscores the need for localized research to inform targeted workforce development strategies amid ongoing digital transformation.

This study addresses that gap by exploring how BPO employees in Dumaguete navigate the challenges of technological adaptation. It investigates employee awareness, attitudes, and readiness toward emerging technologies, alongside organizational efforts in training, leadership, and communication. The goal is to design a targeted intervention plan that supports workforce resilience amid disruption. This study is aligned with SDG 4 (Quality Education), SDG 8 (Decent Work and Economic Growth), and SDG 9 (Industry, Innovation, and Infrastructure), which contribute to inclusive digital transformation by promoting skill development, employee well-being, and sustainable industry growth. The findings also support Foundation University's research agenda on workforce development and technology-driven innovation, offering practical recommendations for local BPO firms aiming to thrive in the digital age.

Literature Review

In this section, we share research, studies, and other references that provide insights into how employees in the BPO industry are adapting to technological change. These themes guide the development of an intervention plan for BPO employees in Dumaguete, Philippines.

Employee Awareness. Employee understanding and awareness of technological shifts is essential for successful adaptation. Sadeghi (2024) emphasizes that transparent communication about AI integration enhances trust and helps employees navigate transitions more smoothly. Similarly, Kaur and Ferreira-Sutherland (2024) argue that early training initiatives and clarity around change can significantly raise employee awareness and reduce resistance, promoting a learning-oriented culture.

Employee Attitudes. Employee attitudes are central to how technology is received in the workplace. Sadeghi (2024) found that when employees associate digital innovations with job enhancement rather than job loss, they tend to display higher engagement and motivation. Conversely, negative attitudes rooted in fear can hinder employees from adapting to change. These studies highlight the importance of involving employees in planning and maintaining an open channel for addressing concerns.

Acceptance. People are more likely to embrace and accept new technologies when they believe the tools are useful and simple to use. Kaur and Ferreira-Sutherland (2024) emphasize that acceptance increases when technologies align with employees' work needs and are introduced with supportive onboarding systems. This argument reinforces the idea that acceptance is not automatic; it must be built through relevance, usability, and support.

Training and Development. Effective learning and development are key to preparing employees for technology-driven change. Maheswari and Jenifer (2020) found that structured training programs play a big role in helping BPO employees perform better. They argue that consistent, skills-based training builds capability and fosters confidence during digital transitions, both of which are critical for long-term adaptability.
Leuhery (2024) performed a methodical study demonstrating how technology is mostly responsible for improving the efficacy of training and supporting companies' expansion. According to the report, employing technology in the classroom makes learning more efficient, individualized, and easily available. In line with the demands of the digital age, Song (2024) emphasizes the need for lifelong learning and skill development to better equip the workforce for future technical developments.

Communication. Clear communication and information sharing are crucial during transformation efforts. Zuzul et al. (2021) studied how organizations communicate and found that companies should encourage open communication to reduce the problems caused by isolated information and to make sure information is shared effectively during technology changes.

Management Support. As technology develops, maintaining the team's motivation and direction depends much on effective leadership. Karakus and Yalçın (2024) explored the implications of digital transformation on organizational change management, emphasizing the need for leaders to engage in restructuring leadership strategies and organizational culture to facilitate employee adaptation. The study highlights that successful digital transformation requires not only technical advancements but also proactive leadership committed to supporting employees through change.

Challenges. Employees often face challenges such as skill mismatches, uncertainty, and increased work stress during technology adoption. Song (2024) explored how rapid technological changes are affecting work and employment, finding that they can cause job losses and make it harder for workers to move between roles. The study advocates comprehensive support systems, including reskilling programs and employee well-being initiatives, to ensure a resilient and adaptable workforce.

Together, these studies offer valuable context and justification for this research. While they examine technological change from different angles—organizational, psychological, and strategic—they collectively point to the importance of employee-focused solutions. This study builds on their findings by localizing the inquiry within Dumaguete's BPO industry and proposing a structured, research-informed intervention that supports both adaptation and growth.

Methodology

Research Design
This study employed a descriptive-comparative quantitative design to assess how BPO employees in Dumaguete City adapt to technological change. Three BPO firms—Sourcescrub Philippines, ECE Contact Centers, and SOPHI Outsourcing—collected data at a single point from both onsite and work-from-home employees. The approach aimed to examine how demographic variables (e.g., job designation, years of service) affect employees' awareness, acceptance, and support needs regarding technological advancements. The findings served as the basis for crafting a structured intervention plan.

Research Locale
We conducted the study in Dumaguete City, Negros Oriental, a regional outsourcing hub known for its academic institutions and steadily growing skilled labor force. As of 2024, the city is home to over 30 BPO firms employing more than 15,000 individuals, contributing approximately ₱300 million monthly to the local economy (Philippine Information Agency, 2024; Outsource Accelerator, 2024). The participating BPO companies in this study operate under hybrid work arrangements, with both onsite and remote teams, making them well-positioned for capturing diverse employee experiences in navigating technological change and adaptation.

Research Participants
A total of 377 employees across the three BPO companies participated in the study. Respondents included agents, supervisors, and managers working under various schedules. Stratified random sampling ensured proportional representation across demographic categories, including sex, age, educational attainment, job designation, years of service, and preferred work schedule. Sample size was calculated using Yamane's formula (1967) with a 7% margin of error and 90% confidence level.

Research Instruments
Data were gathered using a researcher-developed questionnaire, which underwent expert validation and pilot testing to ensure reliability. The instrument achieved a Cronbach's Alpha of 0.789, indicating excellent internal consistency. Distributed via Google Forms due to company policy restrictions on paper-based surveys, the tool consisted of four parts: (1) Demographic profile, (2) Perceptions of technological change (awareness, attitudes, acceptance), (3) Organizational support needs (e.g., training, leadership involvement), (4) Challenges encountered (e.g., digital fatigue, time constraints).

Data Gathering Procedure
Upon obtaining approvals from the Foundation University Research Ethics Committee (Protocol No. [Insert if available]), the Dean, MBA Chairperson, and Research Adviser, formal requests were sent to the operations managers of the selected BPO firms. After obtaining permission, we internally coordinated and conducted the online survey distribution. We obtained digital informed consent and explained the purpose of the study to all participants before they were given access to the survey. Data collection occurred from April 9 to 14, 2025, during which the researcher monitored response rates and addressed technical difficulties as needed.

Data Analysis
Collected data were analyzed using descriptive and non-parametric statistics. Demographic information was summarized through frequency and percentage, while employee perceptions and challenges were interpreted using weighted mean scores. We used the Kruskal–Wallis H test, which is suitable for ranking data from Likert-scale answers, to find important differences in acceptance based on demographic profiles. These analyses informed the development of the proposed intervention strategies.

Results

1. Employees Understanding and Awareness of change

Table 1 presents the extent to which BPO employees in Dumaguete understand and are aware of the technological changes within their organizations. The composite weighted mean of 4.12 indicates a Very Aware (VA) rating overall. The highest-rated statement underscores employees' recognition of innovation as a business imperative: "I am aware that technological change is necessary for company growth" (WM = 4.22). Conversely, the lowest-rated item, "I am aware of the upcoming technological changes in our workplace" (WM = 4.02), reveals a communication gap concerning specific initiatives and updates.

Table 1. Employees level of Understanding and Awareness of change (n=377)

Statements	$\bar{wx}$	**QD**
1. I am aware that technological change is necessary for company growth.	4.22	EA
2. I am aware of the reasons why our company implements technological changes.	4.16	VA
3. I am aware about how technology may change my current role.	4.11	VA
4. I am aware that management will guide us through technological changes effectively.	4.10	VA
5. I am aware of the upcoming technological changes in our workplace.	4.02	VA
Composite	**4.12**	**VA**

Note: 4.21 – 5.00 (Extremely Aware, EA), 3.41 – 4.20 (Very Aware, VA), 2.61 – 3.40 (Somewhat Aware, SA), 1.81 – 2.60 (Barely Aware, BA), 1.00 – 1.80 (Not at All Aware, NA)

While employees demonstrate a high level of awareness regarding the need for innovation, the slightly lower scores for role-specific understanding (WM = 4.11) and confidence in managerial communication (WM = 4.10) suggest the need for more targeted, team-level information dissemination. This aligns with Zorn et al. (2022), who found that consistent organizational communication helps reduce uncertainty and align expectations during technological transitions. Dixon and de Vries (2023) emphasized that early understanding of both strategic and operational aspects strengthens employee involvement, while Wang and Lindquist (2021) confirmed that role-relevant messaging increases confidence and change readiness. These results highlight the importance of customized communication strategies across organizational levels.

2. Attitudes toward the effect of technological change

Table 2 summarizes employee attitudes toward the effects of technological change. The overall composite mean of 4.03 reflects a general agreement (A) across all groups. The strongest sentiment was confidence in personal adaptability (WM = 4.31), followed closely by acknowledgment of the importance of upskilling (WM = 4.20). These findings suggest a positive orientation toward change, grounded in self-efficacy and awareness of long-term career relevance.

Table 2. Attitudes toward the effect of technological change (n=377)

Statements	***wx̄***	**QD**
1. I am confident in my ability to adapt to future technological advancements in the workplace.	4.31	SA
2. Skills need constant upgrading to keep up with technological changes.	4.20	A
3. Technological change creates better opportunities for employees.	4.09	A
4. Rapid technological advancements threaten job security.	3.83	A
5. The speed at which technology evolves causes anxiety.	3.71	A
`Composite	**4.03**	**A**

Note: 4.21 – 5.00 (Strongly Agree, SA), 3.41 – 4.20 (Agree, A), 2.61 – 3.40 (Slightly Agree, SLA), 1.81 – 2.60 (Disagree, D), 1.00 – 1.80 (Strongly Disagree, SD)

However, this overall optimism is accompanied by concerns related to job security and anxiety (WM = 3.71–3.83), reflecting a dual sentiment—enthusiasm for innovation, yet apprehension about the speed and implications of technological change. These findings align with Choudhury et al. (2022), who identified short-term stress and uncertainty as common during periods of digital transformation. Similarly, Nguyen et al. (2021) found that employees who perceive themselves as adaptable exhibit lower resistance to change, while Velásquez et al. (2023) emphasized the importance of continuous professional development in fostering resilience. Together, these insights underscore the need for organizations to invest not only in technical upskilling but also in emotional and psychological support throughout change initiatives.

3. Level of Acceptance toward Technological Advancements

However, this overall optimism is accompanied by concerns related to job security and anxiety (WM = 3.71–3.83), reflecting a dual sentiment—enthusiasm for innovation, yet apprehension about the speed and implications of technological change. These findings align with Choudhury et al. (2022), who identified short-term stress and uncertainty as common during periods of digital transformation. Similarly, Nguyen et al. (2021) found that employees who perceive themselves as adaptable exhibit lower resistance to change, while Velásquez et al. (2023) emphasized the importance of continuous professional development in fostering resilience. Together, these insights underscore the need for organizations to invest not only in technical upskilling but also in emotional and psychological support throughout change initiatives.

Table 3. Level of Acceptance toward technological advancements (n=377)

Statements	***wx̄***	**QD**
1. Using new technologies becomes manageable with proper training.	4.46	HA
2. Technological change is a natural part of working in a BPO environment.	4.37	HA
3. Learning new technologies introduced in the workplace is necessary.	4.36	HA
4. Embracing digital tools that improve work processes is essential.	4.35	HA
5. Resisting technological change limits both personal and organizational growth.	4.11	MA
Composite	**4.33**	**HA**

Note: 4.21 – 5.00 (Highly Accepted, HA), 3.41 – 4.20 (Moderately Accepted, MA), 2.61 – 3.40 (Slightly Accepted, SA), 1.81 – 2.60 (Less Accepted, LA), 1.00 – 1.80 (Not Accepted, NA)

Even though employees believe that "technological change is a normal part of working in a BPO environment" (WM = 4.37) and that "learning new technologies introduced in the workplace is necessary" (WM = 4.36), the slightly lower score on "resisting technological change limits both personal and organizational growth" (WM = 4.11) indicates that some respondents still have some doubts.

These findings support those of Ameen et al. (2021), who found that structured training strongly influences adoption and perceived ease of use. Mariano et al. (2023) confirmed that continuous learning and strategic alignment enhance acceptance, while Al-Okaily et al. (2022) emphasized the importance of organizational readiness and employee buy-in. Overall, the data reflects a receptive workforce that benefits from accessible and targeted training systems.

4. Support Employees' need in terms of Training and development

As shown in Table 4, the composite mean score of 4.25 indicates that training is "Highly Needed" (HN) across all job levels. The most valued item was "Hands-on practice with new systems helps me adapt faster" (WM = 4.43), which highlights the importance of experiential learning.

Table 4. Support Employees' need in terms of Training and development (n=377)

	Statements	$\bar{wx}$	**VI**
1.	Hands-on practice with new systems helps me adapt faster to technological changes.	4.43	HN
2.	I am interested in certification programs to enhance my skills and confidence in using new technology at work.	4.38	HN
3.	Having a workplace mentor or coach to guide me on new technologies would help me adapt more quickly.	4.35	HN
4.	I find on-site workshops useful for keeping my skills up to date with technological changes.	4.17	MN
5.	Self-paced e-learning modules help me learn about new tools and systems at my own pace.	3.90	MN
Composite		**4.25**	**HN**

Note: 4.21 – 5.00 (Highly Needed, HB), 3.41 – 4.20 (Moderately Needed, MN), 2.61 – 3.40 (Slightly Needed, SN), 1.81 – 2.60 (Less Needed, LN), 1.00 – 1.80 (Not Needed, NN)

Preferences for certification programs (WM = 4.38) and coaching (WM = 4.35) also suggest that employees favor structured and guided approaches over independent learning. Self-paced e-learning, with a relatively lower score of 3.90, suggests that employees appreciate flexibility but find it less effective than personalized support.

These observations are consistent with Sarker et al. (2021), who found that mentoring and interactive formats improve learning during tech transitions. Schumacher and Mayer (2022) reported that hands-on training builds confidence and enhances digital literacy. Wang et al. (2023) concluded that blended learning—combining e-learning with live coaching—results in higher engagement and retention.

5. Support Employees' need in terms of Communication and information dissemination

Table 5 illustrates employees' preferences for communication support during technological adaptation. The composite mean of 4.39 indicates that employees view communication as "Highly Needed" (HN). The top statements, "I am more confident adapting to changes when I understand the reasons" and "Clearer communication from management helps me adapt" (both WM = 4.43), point to the critical role of transparency.

Table 5. Support Employees' need in terms of Communication and information dissemination (n=377)

	Statements	$\bar{wx}$	**VI**
1.	I am more confident adapting to changes when I understand the reasons behind the technology shift.	4.43	MN
2.	Clearer communication from management helps me adapt to new systems.	4.43	HN
3.	I would like updates about tech-related changes to be communicated in simple, easy-to-understand language.	4.42	HN
4.	Information about tech changes should be delivered through multiple channels (e.g., email, meetings, chat).	4.42	MN
5.	I feel informed when regular updates about technology changes are provided.	4.22	HN
Composite		**4.39**	**HN**

Note: 4.21 – 5.00 (Highly Needed, HB), 3.41 – 4.20 (Moderately Needed, MN), 2.61 – 3.40 (Slightly Needed, SN), 1.81 – 2.60 (Less Needed, LN), 1.00 – 1.80 (Not Needed, NN)

Employees also emphasized the value of simple language and multichannel dissemination (WM = 4.42), indicating a preference for accessible, inclusive messaging. Even the lowest item was rated as highly needed: "I feel informed when regular updates are provided" (WM = 4.22).

These findings align with Holten and Brenner (2021), who argue that consistent and empathetic communication reduces change resistance. Patel et al. (2022) support using plain language across platforms to enhance comprehension. Johansen and Andersen (2023) found that communicating the rationale behind changes builds trust and buy-in.

6. Support Employees' need in terms of Management Support

Table 6 emphasizes the perceived importance of management support, with a composite mean of 4.38, rated as "Highly Needed" (HN). Top-rated items include "Having a mentor or tech guide" (WM = 4.41) and "I feel more motivated when management shows commitment to upskilling" (WM = 4.40).

Table 6. Support Employees' need in terms of Management Support (n=377)

Statements	$\bar{wx}$	**VI**
1. Having a mentor or tech guide would help me feel more confident using new tools.	4.41	HN
2. I feel more motivated when management shows commitment to upskilling employees.	4.40	HN
3. Management support is essential when adapting to new technology.	4.40	HN
4. I feel encouraged when management acknowledges the challenges of tech adaptation.	4.37	HN
5. I am more likely to embrace new technology when management model its use.	4.36	HN
Composite	**4.38**	**HN**

Note: 4.21 – 5.00 (Highly Needed, HB), 3.41 – 4.20 (Moderately Needed, MN), 2.61 – 3.40 (Slightly Needed, SN), 1.81 – 2.60 (Less Needed, LN), 1.00 – 1.80 (Not Needed, NN)

Even the lowest-rated item, "I am more likely to embrace new technology when management models its use" (WM = 4.36), remains within the HN range, highlighting the importance of visible leadership involvement.
These results affirm the relevance of Transformational Leadership Theory, which emphasizes modeling, mentoring, and motivation during change. Nguyen et al. (2021) found that active management reduces employee resistance. Liu and Lee (2022) showed that commitment to learning from leadership increases employee openness to innovation.

7. Challenges employees encounter in adapting to technological change

Table 7 identifies moderate but notable challenges, with a composite mean of 3.34. The top concern, "I experience digital fatigue" (WM = 3.55), indicates cognitive strain, followed by "Difficulty staying motivated when learning on my own" (WM = 3.49) and "Unstable internet or technical issues" (WM = 3.41).

Table 7. Challenges employees encounter in adapting to technological change (n=377)

Statements	$\bar{wx}$	**VI**
1. I experience digital fatigue when using multiple platforms or systems at once.	3.55	SO
2. I find it difficult to stay motivated when learning about new technology on my own.	3.49	SO
3. I encounter unstable internet or technical issues that hinder adapting to new technology.	3.41	SO
4. I lack time outside of work hours to explore or study new technologies.	3.37	SO
5. I am concerned that my personal data may not be secured when using new digital platforms.	3.31	SD
6. I worry that automation may reduce the value of human contributions in our work.	3.29	SD
7. I feel there is a lack of recognition or incentives for employees who adapt quickly to tech changes.	3.24	SD
8. I find it challenging when new technologies are not user-friendly or intuitive.	3.22	SD
9. I struggle when system upgrades or changes are rolled out without proper system stability.	3.20	SD
Composite	**3.34**	**SD**

Note: 4.21 – 5.00 (Overwhelming Difficulties, OD), 3.41 – 4.20 (Significant Obstacles, SO), 2.61 – 3.40 (Some Difficulties, SD), 1.81 – 2.60 (Minor Obstacles, MO), 1.00 – 1.80 (Task is effortless, TE)
Though not overwhelming, these challenges point to limitations in infrastructure and motivation. Issues like system usability (WM = 3.22) and lack of recognition (WM = 3.24) also suggest that emotional and procedural aspects of adaptation need attention.

Song and Hill (2021) noted that unguided digital learning reduces motivation. Akmad and Abatayo (2024) confirmed the negative effect of unstable connectivity. Achievers (2025) highlighted that lack of recognition for adaptability discourages continued effort. These findings underscore the need for a user-centered and supportive digital transformation approach.

8. Significant Difference in Employees' Level of Acceptance toward Technological Advancement when Grouped According to Their Demographic Profile

Table 8 shows that the Kruskal–Wallis test indicates that only "Years of Service" (p = 0.002) and "Designation" (p = 0.001) have a significant impact on acceptance levels, while other factors like age, education, and preferred work schedule do not show any significant differences.

Table 8. Test of Significant Difference in Employees' Level of Acceptance toward Technological Advancement when grouped according to their Demographic Profile (n=377)

Demographic	F-statistic	p-value	Interpretation	Decision
1. Age	1.465	0.212	Not Significant	Fail to Reject the Null Hypothesis
2. Educational Attainment	0.491	0.743	Not Significant	Fail to Reject the Null Hypothesis
3. Years of Service	0.013	0.002	Significant	Reject the Null Hypothesis
4. Preferred Work Schedule	0.499	0.608	Not Significant	Fail to Reject the Null Hypothesis
5. Designation	0.055	0.001	Significant	Reject the Null Hypothesis

*Level of significance = 0.05

Note :

Value of r_s	**Strength of Relationship** (Statistical Correlation, 2009)
Between ± 0.50 to ± 1.00	± strong relationship
Between ± 0.30 to ± 0.49	± moderate relationship
Between ± 0.10 to ± 0.29	± weak relationship
Between ± 0.01 to ± 0.09	± very weak relationship

These findings suggest that tenure and job role shape how employees respond to technological change. Li et al. (2022) observed that long-tenured employees often show resistance due to ingrained habits, whereas newer hires are more adaptable. Kumar and Singh (2021) found that managers tend to embrace tech change more readily due to involvement in decision-making processes.

This suggests that interventions should be tailored according to tenure and role to maximize impact and promote inclusive digital adaptation.

Discussion

This study investigated how BPO employees in Dumaguete City adapt to technological change, focusing on their perceptions, support needs, and challenges. The results provide meaningful insights into the workforce's readiness and capacity to engage with digital transformation in a provincial BPO context.

The demographic data revealed a workforce composed mainly of young professionals (ages 26–30), mostly female, and highly educated with bachelor's degrees. These characteristics indicate a workforce likely to be open to learning and adaptation, aligning with findings from Schumacher and Mayer (2022), who observed similar patterns in provincial outsourcing centers. The predominance of agent-level roles (89.39%) suggests that digital adaptation strategies should prioritize frontline employees who are most impacted by day-to-day operational technology shifts.

Findings showed that employees are generally aware of the importance of technological advancement for organizational growth ($\bar{x}$ = 4.22) and confident in their ability to adapt ($\bar{x}$ = 4.31). However, worries about the rapid speed of digital change ($\bar{x}$ = 3.71) show that employees are feeling stressed about technology, which matches what Tarafdar et al. (2021) found. These results highlight the need for balanced strategies that not only promote technology adoption but also address psychological well-being.

Support mechanisms emerged as critical to successful adaptation. Hands-on training ($\bar{x}$ = 4.43), clear communication from management ($\bar{x}$ = 4.43), and mentorship ($\bar{x}$ = 4.41) were rated as highly beneficial. This finding supports the work of Ameen et al. (2021) and Sarker et al. (2021), who advocate for experiential and guided learning in digital transitions. In contrast, lower ratings for self-paced learning modules ($\bar{x}$ = 3.90) suggest a need to reevaluate the design and accessibility of existing e-learning tools. Organizations may need to enhance training formats to favor structured, social, and context-based learning.

Challenges such as digital fatigue ($\bar{x}$ = 3.55), lack of motivation in independent learning ($\bar{x}$ = 3.49), and technical difficulties like unstable internet ($\bar{x}$ = 3.41) were also identified. These findings highlight the cognitive load and infrastructural barriers that hinder effective technological adaptation. As supported by Tarafdar et al. (2021), addressing digital stress and providing reliable technical infrastructure are essential to ensure long-term engagement and productivity.

The Kruskal–Wallis test revealed that years of service and job designation significantly influenced employees' acceptance of technological change. More tenured and higher-level employees demonstrated greater openness to technology, suggesting that experience and role exposure play a vital role in shaping attitudes toward innovation (Wang et al., 2023). However, the study found no significant differences across age, educational attainment, or work schedule, suggesting that these variables may have less influence in this specific population.

The findings emphasize the importance of role-specific interventions in technology rollouts. For frontline agents, practical training and hands-on guidance are key. Supervisors and managers, on the other hand, may benefit from leadership-focused digital competencies and change management strategies. Communication transparency, mentoring, and the reduction of platform overload should be considered core elements of any digital transformation initiative. Moreover, these insights are particularly relevant to regional BPO hubs, where infrastructure and support systems may be more limited than in metro areas.

We must acknowledge several limitations. First, the study relied on self-reported data, which may be affected by social desirability bias. Second, the heavy concentration of agent-level employees in the demographic distribution limited the depth of insight into higher-level perspectives. Third, the findings are geographically confined to Dumaguete City, which may affect generalizability to other BPO hubs in the Philippines or abroad. Lastly, the study did not explore organizational policies or current training practices, which could further explain employees' perceived needs and challenges.

Conclusion

This study confirms that BPO employees in Dumaguete exhibit high levels of awareness, positive attitudes, and strong acceptance toward technological change. However, critical challenges remain—namely, digital fatigue, technical instability, and difficulties with self-directed learning. The results show that people clearly prefer organized and supportive methods like hands-on training ($\bar{x}$ = 4.43), clear communication ($\bar{x}$ = 4.43), and mentorship ($\bar{x}$ = 4.41), rather than less structured options like self-paced modules ($\bar{x}$ = 3.90). These insights align with Sahni & Chilton (2025) and Devlin Peck (2025), who advocate for experiential, guided learning in organizational settings. Statistical analysis further reveals that tenure and job designation significantly influence acceptance levels, consistent with the findings of Li et al. (2022) and Kumar & Singh (2021). Additionally, the effects of digital fatigue and unreliable systems—pointed out by Akmad & Abatayo (2024) and Mahmood et al. (2025)—show that we need wellness programs, better system connections, and improved user experience design to keep the workforce strong. The study contributes to the growing literature on provincial BPO adaptation and emphasizes the need for people-centered digital transformation strategies. Future research may explore longitudinal interventions, cross-regional comparisons, or the role of AI tools in enhancing employee engagement and learning outcomes.

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