

# Managing Assistive Technology Adoption for Sustainable Special Education Performance

Tri Darsono<sup>1\*</sup>, Tulus Haryono<sup>1</sup>, Ahmad Ikhwan Setiawan<sup>1</sup>, Mugi Harsono<sup>1</sup>,  
Heri Wijayanto<sup>2</sup>, Agus Dwianto<sup>1</sup>

<sup>1</sup>(Corresponding Author)\*, Department of Economics, Faculty of Economics and Business, Universitas Sebelas  
Maret, Central Java, Indonesia, 57216

luluspdie\_168pdie168@uns.ac.id,

ORCID: <https://orcid.org/0009-0003-0870-9890>, Scopus Author ID: 59002088000

<sup>1</sup>Department of Economics, Faculty of Economics and Business, Universitas Sebelas Maret, Central Java,  
Indonesia, 57216

tulusharyono\_fe@staff.uns.ac.id

ORCID: <https://orcid.org/0000-0002-7691-2706>, Scopus Author ID: 56703665600

<sup>1</sup>Department of Economics, Faculty of Economics and Business, Universitas Sebelas Maret, Central Java,  
Indonesia, 57216

ahmadikhwan@staff.uns.ac.id

ORCID: <https://orcid.org/0000-0002-5117-7434>, Scopus Author ID: 57198421733

<sup>1</sup>Department of Economics, Faculty of Economics and Business, Universitas Sebelas Maret, Central Java,  
Indonesia, 57216

mugiharsono\_fe@staff.uns.ac.id

ORCID: <https://orcid.org/0009-0006-4303-7307>, Scopus Author ID: 57195715887

<sup>2</sup>Department of Accounting, Faculty of Economics, Muhammadiyah University of Ponorogo, East Java, Indonesia,  
63471

ok\_coi@yahoo.com

ORCID: <https://orcid.org/0000-0002-9488-0373>, Scopus Author ID: 57203973694

<sup>1</sup>Department of Accounting, Faculty of Economics and Business, Universitas Sebelas Maret, Central Java,  
Indonesia, 57216

agusdwianto90@gmail.com

ORCID: <https://orcid.org/0009-0009-3681-048X>, Scopus Author ID: 57195054771

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## ABSTRACT:

This study examines how managerial capabilities influence assistive technology adoption and sustainable performance in special education institutions. Drawing on the Resource-Based View, Stakeholder Theory, and the Technology Acceptance Model, it investigates sustainable education financing, disability-related accounting disclosure, inclusive social marketing orientation, and digital market capability as antecedents of institutional readiness and performance. Data were collected from 312 managerial respondents representing special education institutions in Indonesia and analyzed using partial least squares structural equation modeling. The results show that sustainable education financing, disability-related accounting disclosure, and inclusive social marketing orientation significantly improve sustainable special education performance, whereas digital

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market capability has no significant direct effect. However, all four managerial capabilities significantly strengthen assistive technology adoption, which subsequently enhances sustainable performance and mediates the relationship between managerial capabilities and performance. The findings indicate that assistive technology adoption depends not only on resource availability but also on managerial readiness, accountability practices, stakeholder engagement, and digital capacity.

**Keywords:** Assistive Technology, Special Education, Technology Readiness, Managerial Capabilities, Sustainability

## 1. Introduction

Assistive technology has become an essential component for improving educational access, engagement, and outcomes for students with disabilities. It includes digital devices, adaptive learning applications, communication tools, accessible software, and AI-powered aids addressing functional, cognitive, sensory, and instructional barriers for learners. Nevertheless, assistive technology remains widely unavailable, especially in developing countries. More than 2.5 billion people require at least one assistive product to perform everyday activities, but these products are unavailable to almost 1 billion people (WHO, 2011; World Health Organization, 2015). Availability in many low- and middle-income countries is far below actual demand. That is, the evidence presented above implies that assistive technology adoption is not only a technical problem but also a managerial one involving finance, accountability, user advocacy interest, and institutional readiness.

Adoption is a complex process that extends beyond simply providing digital tools in special education settings. Institutions must address the ongoing revenue gap, reallocate resources away from disability-related expenses, be transparent about accessibility expenditures, actively involve parents and donors through engagement drives, and invest in digital initiatives equitably. Additionally, they need to employ teachers and administrators who are prepared, if not compelled, to support learning with technology. Research shows that successful e-learning management, inclusive environments, Universal Design for Learning, and AI-driven learning rely on effective planning, infrastructure

readiness, teachers' skills, accessibility considerations, and stakeholder collaboration (Debasu & Yitayew, 2024; Murtono & Prayitno, 2025; Pang et al., 2024; Saini et al., 2024). However, most studies focus on pedagogical effectiveness, staff training, or student outcomes, leaving a gap in understanding the managerial skills necessary for sustainable assistive technology adoption. This highlights an important interdisciplinary research area that spans special education management, finance, accounting, marketing, and digital transformation.

Sustained funding for education is particularly important from a financial perspective, as assistive technology requires ongoing investments in devices, software, infrastructure, maintenance, and staff development. Previous research highlights the challenges of affordability, inadequate public funding, limited support systems, and fragmented service delivery, limiting access to assistive technology (Borg et al., 2011; Cote, 2021; Eide et al., 2023; World Health Organization, 2015), especially in low- and middle-income settings. One recent study on rehabilitation financing, echoing these sentiments, highlights the need for sustainably financed systems in low-resource settings (Bachani et al., 2024). From an accounting perspective, disclosure enhances accountability for institutional funds across allocation, monitoring, auditing, and reporting. Transparent reporting enhances credibility, donor confidence, stakeholder trust, and social accountability (Behn et al., 2010; Rizani & Daengs GS, 2026), especially among institutions that rely on public, donor, and community support for their continuing operation (Saxton et al.). Increased expectations for organizations to report

disability-related data are also evident in studies exploring disability inclusion and corporate responsibility (Kirkpatrick et al., 2020; Mullin et al., 2024).

Also, inclusive social marketing matters because of the general public's awareness of donor engagement, parental participation, and societal acceptance of inclusive education (Jones, 2019). Implementing stakeholder engagement and disability-sensitive representation can enhance social value, institutional legitimacy, and inclusion outcomes (Buyucek et al., 2016; Cossu et al., 2026; Masiello et al., 2024; Xu & Saxton, 2019). In the digital market, capabilities enable these data-driven decisions, including multi-channel communication, an online brand for fundraising, stakeholder relationship management, and the promotion of school programs or student products. Studies on ICT integration and corporate digital transformation demonstrate that embedding organizational capabilities into institutional routines and renewing organizational strategies are positively associated with improved stakeholder adaptability and enhanced performance at higher levels of stakeholder management (Kannan et al., 2024; Maecker et al., 2016; Tortora et al., 2021; Verhoef et al., 2021; Warner & Wäger, 2019).

This research proposes Assistive Technology Adoption Readiness as a mediator linking managerial capabilities to sustainable performance in special education. Readiness reflects an institutional disposition to adopt technology, encompassing available infrastructure, staff digital skills, perceived usefulness, and policy support. This reasoning is grounded in the Resource-Based View, Stakeholder Theory, and the Technology Acceptance Model (Barney, 1991; Davis, 1989; Freeman, 1984; Ly et al., 2025; Tornatzky & Fleischer, 1990; Venkatesh et al., 2003; Zhu et al., 2006). Thus, the objective of this study is to investigate linkages among sustainable education financing, disability-related accounting disclosure, inclusive social marketing orientation, and digital market capability, and their relationships with assistive technology adoption readiness and sustainable special education performance.

## 2. Literature Review and Hypotheses Development

An integrated approach was employed in this study, combining the resource-based view, stakeholder theory, and the technology acceptance model to empirically examine special education institutions' adaptation of assistive technology to support sustainable performance. According to the Resource-Based View, an institution's resources and capabilities lead to sustained performance if they are valuable, rare, inimitable, and well-organized (Barney, 1991). In this regard, the following strategic capabilities can be used to increase institutional readiness for assistive technology: sustainable financing, accounting disclosure of disability-related assets, inclusive social marketing, and digital market capability. Another significant argument for stakeholder theory is that special education institutions face pressure to respond to subsequent stakeholder demands with more transparent and inclusive governance (Freeman, 1984). Conversely, the Technology Acceptance Model posits that acceptance of technology is determined by its perceived usefulness and ease of use (Davis, 1989; Ly et al., 2025). Recent studies indicate that digital capability, AI readiness, pedagogical agents, e-learning management (which adapts educational content and teaching/learning experiences to capture the richness of diversity), Universal Design for Learning (UDL), and real-time predictions, which move beyond deterministic criteria to be guided by controllable features through logic into transformations (AIT = Assistance in Learning Task), are increasingly central to technology-supported education and institutional adaptation (Hao et al., 2026; Ly et al., 2025; Pang et al., 2024; Saini et al., 2024; Tortora et al., 2021; Verhoef et al., 2021).

Ensuring that special education services remain accessible, accountable, and inclusive requires managerial capacity. At the resource level, sustainability depends on an institution's ability to convert limited resources into long-term educational value (Barney, 1991). This is especially important for assistive technology, which incurs ongoing costs for devices, software, infrastructure, maintenance, and staff training. Previous research

has identified cost, shallow or inaccessible funding mechanisms, and fragmented service systems for assistive technologies as key barriers (Borg et al., 2011; Cote, 2021; Finlayson & Hammel, 2003). Disability-related reporting increases transparency and accountability, as well as stakeholder confidence, thereby lending credibility to an organization's operations (Behn et al., 2010; Dethier et al., 2024; Harris & Neely, 2021). (Buyucek et al., 2016; Masiello et al., 2024; Xu & Saxton, 2019) argue that integrating disability-sensitive communication, social participation, and public support through inclusive social marketing and stakeholder engagement can enhance institutional effectiveness. Digital market capability can facilitate performance by enabling digital transformation, managing stakeholder relationships, communicating data-driven information, and making organizations more adaptable (Maecker et al., 2016; Tortora et al., 2021; Verhoef et al., 2021; Warner & Wäger, 2019).

These managerial capabilities are also presumed to impact the readiness to adopt assistive technology. Long-term financial support enables institutions to fund assistive technology, digital infrastructure, software updates, and staff development. The disclosure of disabilities supports transparency of accessibility spending and stakeholder trust in technology investment (Behn et al., 2010; Harris & Neely, 2021). Inclusive social marketing facilitates parents, attracts donors, and enhances community acceptance of assistive technology (Buyucek et al., 2016; Masiello et al., 2024; Xu & Saxton, 2019). Consequently, digital market capability fosters readiness through data-driven planning, multichannel communication, and adaptive responses to change in academic technology

(Tortora et al., 2021; Verhoef et al., 2021; Warner & Wäger, 2019). Furthermore, special education provides evidence that readiness, infrastructure, and accessibility are prerequisites for successful e-learning, inclusive learning environments, and AI-supported education (Pang et al., 2024; Saini et al., 2024).

Performance gaps can be addressed by ensuring that institutions with a higher level of readiness to adopt assistive technologies are better positioned to offer students with disabilities, within the broader community context, continuous, high-quality special education support that is more accessible, adaptive, and sustainable. The institution's level of commitment defines readiness, the availability of infrastructure, staff digital skills, the institution's perception of the technology's usefulness, and the support the institution receives from policymakers. The Technology Acceptance Model and the Theory of Innovation Adoption highlight user acceptance, perceived usefulness, organizational readiness, and infrastructure as key to successful implementation (Barney, 1991; Borg et al., 2011; Cote, 2021; Freeman, 1984; Lojunt et al., 2024; Verhoef et al., 2021). These factors also have moderating effects, enabling financial, accounting, marketing, and digital capabilities to translate into sustainable performance (Atikah Candraningtyas & Rahmawati, 2025). To achieve this, sustainable funding must be invested in technological infrastructure and skill capacity; accounting disclosures must build trust in technology investments; inclusive marketing must garner stakeholder support; and digital capabilities must enable the delivery of adaptive, technology-supported service.

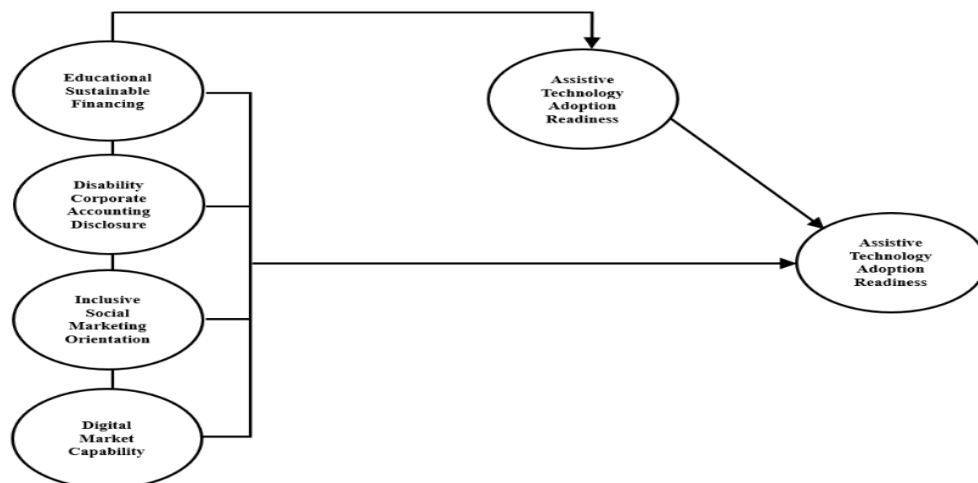


**Figure 1.** The conceptual framework

Therefore, the study identifies Educational Sustainable Financing, Disability Corporate Accounting Disclosure, Inclusive Social Marketing Orientation, and Digital Market Capability as the key antecedents for Assisted Technology Adoption Readiness and the sustainability of Special Education Performance in this conceptual model. Managerial capabilities influence sustainable institutional outcomes, with Assisted Technology Adoption Readiness serving as the primary mediating construct. The framework supporting this is illustrated in Figure 1.

### 3. Methodology

#### 3.1 Study Design

This study used a quantitative explanatory design to clarify the relationships among managerial capabilities, readiness to adopt assistive technology, and the sustainability of special educational performance. Because the study aimed to assess managerial perceptions at a single point in time and to test theory-based hypotheses, a cross-sectional survey was deemed the most appropriate method. The empirical model was developed using the resource-based view, stakeholder theory, and technology adoption (Barney, 1991; Freeman, 1984;

Hair & Alamer, 2022), enabling exploration of direct and mediating relationships among latent variables. This approach is well-suited to organizational and educational management, using structured questionnaires, reflective constructs, and multivariate statistical analysis.

#### 3.2 Participants and Sampling

This study's population includes all staff managers of special education institutions and foundations within Indonesia's special education sector. Respondents also included school principals or directors, finance and accounting managers, and marketing or public relations officers. Since the study used purposive sampling, participants with direct experience in institutional finance, accountability stakeholder engagement, and technology adoption were prioritized. Questionnaires were distributed electronically in Java, Sumatra, Sulawesi, and Kalimantan. Initially, 400 respondents provided contact details; of these, 312 completed the key-variable questionnaire, all of whom were eligible and valid, resulting in a response rate of 78.0%. This sample size is sufficient for studies using PLS-SEM and institutional perception analyses (Pang et al., 2024; Shmueli et al., 2019).

Table 1. Sample Profile

| Category                   | Classification                 | Target | Response | %   |
|----------------------------|--------------------------------|--------|----------|-----|
| Distributed questionnaires | Special education institutions | 400    | —        | 100 |
| Valid responses            | Usable questionnaires          | —      | 312      | 78  |
| Invalid responses          | Incomplete/excluded            | —      | 88       | 22  |

| Category   | Classification                         | Target          | Response           | %                         |
|------------|----------------------------------------|-----------------|--------------------|---------------------------|
| Gender     | Male / Female                          | —               | 134 / 178          | 42.9 / 57.1               |
| Age        | 25–35 / 36–50 / >50 years              | —               | 78 / 164 / 70      | 25.0 / 52.6 / 22.4        |
| Education  | Bachelor's / Master's/Doctoral         | —               | 210 / 102          | 67.3 / 32.7               |
| Role       | Finance / Marketing / Principal        | 100 / 100 / 200 | 82 / 75 / 155      | 82.0 / 75.0 / 77.5        |
| Region     | Java / Sumatra / Sulawesi / Kalimantan | —               | 126 / 72 / 58 / 56 | 40.4 / 23.1 / 18.6 / 17.9 |
| Experience | 2–5 / 6–10 / >10 years                 | —               | 86 / 142 / 84      | 27.6 / 45.5 / 26.9        |

### 3.3 Measures

The questionnaire was based on concepts from the literature on sustainable finance, accounting disclosure, inclusive marketing, and their influence on environmental performance, digital capabilities, and technology readiness, as well as a theory-based analysis of dimensions and performance in special education. All constructs, except for restaurant brand equity, were measured reflectively using five

indicators on a five-point Likert scale (1 = strongly disagree; 5 = strongly agree). These indicators were customized for assistive technology adoption, disability inclusion, and institutional sustainability. Item refinement was further guided by recent research on inclusive learning environments, e-learning management, Universal Design for Learning, and technology-supported special education (Debasu & Yitayew, 2024; Pang et al., 2024; Saini et al., 2024).

Table 2. Measurement Instruments

| Construct                                  | Code  | Indicator Statement                                              | Source                                                                            |
|--------------------------------------------|-------|------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Educational Sustainable Financing          | ESF1  | Diverse funding sources for disability-support facilities        | (Adams & Lok, 2022; Barney, 1991; Lojunt et al., 2024)                            |
|                                            | ESF2  | Long-term budgets for assistive software and devices             | (Borg et al., 2011; Cote, 2021; Finlayson & Hammel, 2003)                         |
|                                            | ESF3  | Efficient capital management for special education development   | (Barney, 1991; Borg et al., 2011; Cote, 2021)                                     |
|                                            | ESF4  | Risk management in technology-infrastructure funding             | (Borg et al., 2011; Cote, 2021; Finlayson & Hammel, 2003)                         |
|                                            | ESF5  | Strategic partnerships with vendors or donors                    | (Borg et al., 2011; Finlayson & Hammel, 2003; Freeman, 1984)                      |
| Disability Corporate Accounting Disclosure | DCAD1 | Transparent reporting of disability-related donations and grants | (Behn et al., 2010; Harris & Neely, 2021; Saxton et al., 2012)                    |
|                                            | DCAD2 | Audited reports on accessibility and technology spending         | (Behn et al., 2010; Borg et al., 2011; Harris & Neely, 2021; Saxton et al., 2012) |
|                                            | DCAD3 | Social impact indicators for students with disabilities          | (Castillo & Roberts, 2024; Freeman, 1984)                                         |
|                                            | DCAD4 | Disability indicators in sustainability reporting                | (Ligorio et al., 2025; Xinyu et al., 2026)                                        |
|                                            | DCAD5 | Compliance with accessibility-related reporting regulations      | (Behn et al., 2010; Freeman, 1984; Harris & Neely, 2021)                          |
| Inclusive Social Marketing Orientation     | ISMO1 | Promotion of digital rights and accessibility                    | (Borg et al., 2011; Masiello et al., 2024; Rina et al., 2024; Saini et al., 2024) |
|                                            | ISMO2 | Disability-inclusive messages and branding                       | (Martinez-Ortigosa et al., 2023)                                                  |
|                                            | ISMO3 | Ethical marketing of special education services                  | (Andreasen, 2002; Borg et al., 2011)                                              |
|                                            | ISMO4 | Engagement with parents, donors, and communities                 | (Buyucek et al., 2016; Debasu & Yitayew, 2024)                                    |

| Construct                                    | Code  | Indicator Statement                                       | Source                                                                     |
|----------------------------------------------|-------|-----------------------------------------------------------|----------------------------------------------------------------------------|
|                                              | ISMO5 | Social-cause marketing for inclusive education            | (Andreasen, 2002; Buyucek et al., 2016; Freeman, 1984)                     |
| Digital Market Capability                    | DMC1  | Data-driven decision-making to expand stakeholder reach   | (Verhoef et al., 2021; Xu & Saxton, 2019)                                  |
|                                              | DMC2  | Digital platforms for student products or school programs | (Maecker et al., 2016; Verhoef et al., 2021)                               |
|                                              | DMC3  | Rapid response to digital changes in education            | (Lojunt et al., 2024; Verhoef et al., 2021; Warner & Wäger, 2019)          |
|                                              | DMC4  | Multi-channel digital communication with stakeholders     | (Maecker et al., 2016; Yang et al., 2019)                                  |
|                                              | DMC5  | Technology-based stakeholder relationship management      | Maecker et al., 2016; Verhoef et al., 2021; Xu & Saxton, 2019              |
| Assistive Technology Adoption Readiness      | ATAR1 | Willingness to adopt AI-based or digital assistive tools  | (Davis, 1989; Rizani et al., 2026; Venkatesh et al., 2003; Widayati, 2025) |
|                                              | ATAR2 | Adequate infrastructure for assistive devices             | (Pang et al., 2024; Saini et al., 2024)                                    |
|                                              | ATAR3 | Staff digital literacy training on assistive technology   | (Davis, 1989; Dwianto et al., 2024; Pang et al., 2024)                     |
|                                              | ATAR4 | Perceived usefulness of assistive technology              | (Davis, 1989; Venkatesh et al., 2003)                                      |
|                                              | ATAR5 | Institutional policies supporting technology adoption     | (Tornatzky & Fleischer, 1990; Zhu et al., 2006)                            |
| Special Education Performance Sustainability | SEPS1 | Improved learning outcomes for students with disabilities | (Asdar & Mujahidah, 2024; Pang et al., 2024)                               |
|                                              | SEPS2 | Long-term financial resilience                            | (Borg et al., 2011; Cote, 2021)                                            |
|                                              | SEPS3 | Retention of qualified special education teachers         | (Bailatul Nur Avian & Putro Wibowo, 2024; Debasu & Yitayew, 2024)          |
|                                              | SEPS4 | Stakeholder trust and institutional reputation            | (Freeman, 1984; Masiello et al., 2024; Saxton et al., 2012)                |
|                                              | SEPS5 | Expansion of technology-assisted classrooms               | (Pang et al., 2024; Saini et al., 2024)                                    |

### 3.4 Data Collection Procedure

We developed an online questionnaire and invited eligible managerial respondents from Indonesian special education institutions to participate. Participants were informed of the study's academic purpose and that participation was voluntary before completing the survey; responses were anonymized to protect confidentiality. No additional identifiers were linked to the data. To reduce common method bias, questions were clearly worded, and sections for each construct were separated to minimize response biases and ensure participants understood that there were no right or wrong answers. During analysis, these procedural controls were further validated through statistical diagnostics (Ainurrohman & Rahmawati, 2024; Hair & Alamer, 2022; Kock, 2015).

### 3.5 Analytical Strategy

Data analysis was conducted using partial least squares structural equation modeling in two stages: assessing the measurement and structural models. The measurement model was evaluated using outer loadings, internal consistency reliability, composite reliability, convergent validity, and discriminant validity. For the structural model, collinearity diagnostics, path coefficients, R-squared values, effect sizes, and predictive relevance were assessed, followed by bias-corrected bootstrapping and indirect-effect analysis. A mediation test examined whether Assistive Technology Adoption Readiness mediates the relationship between managerial capabilities and the sustainability of Special Education Performance (Rizani et al., 2026). Furthermore, full collinearity diagnostics with VIF values below the accepted threshold (Ainurrohman & Rahmawati, 2024; Hair & Alamer, 2022; Kock,

2015; Perdana Putri & Dwianto, 2025; Shmueli et al., 2019) were conducted to assess for common method bias.

## 4. Results

### 4.1 Sample Characteristics

The final dataset comprised 312 valid responses from professional managers employed in Indonesian special educational institutions. The respondents included school principals/directors, finance/accounting managers, and marketing/public relations personnel, as these represent the three main types of institutional roles. Of the total sample, 57.10% were female, and

42.90% were male. The sample was largely representative of experienced institutional personnel, with most respondents aged between 36 and 50. In terms of educational attainment, 67.3% held a bachelor's degree, while the remaining 32.7% held a master's or doctoral degree. Respondents were located in Java, Sumatra, Sulawesi, and Kalimantan, covering major regions of Indonesia. The participants' profiles suggest that the data were collected from individuals with the necessary managerial, financial, communication, and institutional knowledge to assess whether the institution was ready to adopt assistive technology and sustainable special education.

Table 3. Respondent Profile for Empirical Analysis

| Profile category      | Classification                       | Frequency | Percentage |
|-----------------------|--------------------------------------|-----------|------------|
| Valid sample          | Usable questionnaire                 | 312       | 100.00%    |
| Gender                | Male                                 | 134       | 42.90%     |
|                       | Female                               | 178       | 57.10%     |
| Age                   | 25–35 years                          | 78        | 25.00%     |
|                       | 36–50 years                          | 164       | 52.60%     |
|                       | >50 years                            | 70        | 22.40%     |
| Education level       | Bachelor's degree / S1               | 210       | 67.30%     |
|                       | Master's / doctoral degree           | 102       | 32.70%     |
| Institutional role    | Finance/accounting manager           | 82        | 26.30%     |
|                       | Marketing / public relations officer | 75        | 24.00%     |
|                       | School principal/director            | 155       | 49.70%     |
| Regional distribution | Java                                 | 126       | 40.40%     |
|                       | Sumatra                              | 72        | 23.10%     |
|                       | Sulawesi                             | 58        | 18.60%     |
|                       | Kalimantan                           | 56        | 17.90%     |
| Work experience       | 2–5 years                            | 86        | 27.60%     |
|                       | 6–10 years                           | 142       | 45.50%     |
|                       | >10 years                            | 84        | 26.90%     |

### 4.2 Measurement Model

Convergent validity, discriminant validity, internal consistency, and indicator reliability were evaluated using Confirmatory Factor Analysis (CFA). As shown in Table 4, all reflective indicator loadings surpassed the 0.70 threshold, ranging from 0.776 to 0.839. Table 2 (T1) demonstrates strong internal consistency across all constructs, with Cronbach's alpha values between 0.860 and 0.891, rho\_A from 0.869 to 0.891, and composite reliability scores from 0.898 to 0.920. Convergent validity was confirmed by AVE values, which ranged from 0.639 to 0.696, comfortably above the 0.500 minimum. These

findings indicate that the indicators reliably measure their respective constructs, supporting their suitability for structural equation modeling.

Discriminant validity was initially assessed using the Fornell–Larcker criterion. As shown in Table 5, the square roots of AVE (on the diagonals) ranged from .799 to .834, exceeding the inter-construct correlations. The highest correlation, 0.485, was between Assistive Technology Adoption Readiness (the acquisition stage) and Special Education Performance Sustainability; however, it remained lower than the diagonal values for both constructs. To verify further, the HTMT ratio was also

calculated as a more rigorous test of discriminant validity. Table 6 indicates that HTMT values ranged from 0.107 to 0.549, all below the 0.850 threshold.

These results confirm that the constructs are distinct and appropriate for analyzing more complex structural models in future tests.

Table 4. Measurement Model Results

| Construct | Indicator | Loading | $\alpha$ | rho_A | CR    | AVE   |
|-----------|-----------|---------|----------|-------|-------|-------|
| ATAR      | ATAR1     | 0.838   | 0.891    | 0.891 | 0.92  | 0.696 |
|           | ATAR2     | 0.829   |          |       |       |       |
|           | ATAR3     | 0.839   |          |       |       |       |
|           | ATAR4     | 0.829   |          |       |       |       |
|           | ATAR5     | 0.836   |          |       |       |       |
| DCAD      | DCAD1     | 0.812   | 0.86     | 0.876 | 0.898 | 0.639 |
|           | DCAD2     | 0.819   |          |       |       |       |
|           | DCAD3     | 0.800   |          |       |       |       |
|           | DCAD4     | 0.788   |          |       |       |       |
|           | DCAD5     | 0.776   |          |       |       |       |
| DMC       | DMC1      | 0.787   | 0.869    | 0.874 | 0.905 | 0.655 |
|           | DMC2      | 0.836   |          |       |       |       |
|           | DMC3      | 0.814   |          |       |       |       |
|           | DMC4      | 0.815   |          |       |       |       |
|           | DMC5      | 0.795   |          |       |       |       |
| ESF       | ESF1      | 0.820   | 0.872    | 0.874 | 0.907 | 0.661 |
|           | ESF2      | 0.813   |          |       |       |       |
|           | ESF3      | 0.814   |          |       |       |       |
|           | ESF4      | 0.812   |          |       |       |       |
|           | ESF5      | 0.805   |          |       |       |       |
| ISMO      | ISMO1     | 0.837   | 0.876    | 0.888 | 0.909 | 0.667 |
|           | ISMO2     | 0.822   |          |       |       |       |
|           | ISMO3     | 0.834   |          |       |       |       |
|           | ISMO4     | 0.792   |          |       |       |       |
|           | ISMO5     | 0.798   |          |       |       |       |
| SEPS      | SEPS1     | 0.801   | 0.867    | 0.869 | 0.904 | 0.653 |
|           | SEPS2     | 0.793   |          |       |       |       |
|           | SEPS3     | 0.806   |          |       |       |       |
|           | SEPS4     | 0.805   |          |       |       |       |
|           | SEPS5     | 0.835   |          |       |       |       |

Table 5. Fornell–Larcker Criterion

| Construct | ATAR  | DCAD  | DMC   | ESF   | ISMO  | SEPS  |
|-----------|-------|-------|-------|-------|-------|-------|
| ATAR      | 0.834 |       |       |       |       |       |
| DCAD      | 0.207 | 0.799 |       |       |       |       |
| DMC       | 0.226 | 0.116 | 0.809 |       |       |       |
| ESF       | 0.351 | 0.089 | 0.166 | 0.813 |       |       |
| ISMO      | 0.311 | 0.099 | 0.115 | 0.139 | 0.817 |       |
| SEPS      | 0.485 | 0.308 | 0.185 | 0.282 | 0.263 | 0.808 |

Table 6. HTMT Ratio

| Construct | ATAR  | DCAD  | DMC | ESF | ISMO | SEPS |
|-----------|-------|-------|-----|-----|------|------|
| ATAR      | —     |       |     |     |      |      |
| DCAD      | 0.227 | —     |     |     |      |      |
| DMC       | 0.256 | 0.127 | —   |     |      |      |

| Construct | ATAR  | DCAD  | DMC   | ESF   | ISMO  | SEPS |
|-----------|-------|-------|-------|-------|-------|------|
| ESF       | 0.397 | 0.107 | 0.193 | —     |       |      |
| ISMO      | 0.346 | 0.112 | 0.132 | 0.158 | —     |      |
| SEPS      | 0.549 | 0.349 | 0.21  | 0.323 | 0.293 | —    |

4.3 Structural Model

After confirming the reliability and validity, the structural model was assessed. This assessment covered collinearity diagnostics, the coefficient of determination, effect size, predictive relevance, and the strength of structural paths. Inner VIF values ranged from 1.025 to 1.306, all below the thresholds of 3.3 and 5.0, indicating no multicollinearity. The R<sup>2</sup> values indicated that the model accounted for 23.4% of the variance in assistive technology adoption readiness and 30.7% of the variance in the sustainability of special education performance. The adjusted R<sup>2</sup> values of 0.224 for ATAR and 0.296 for SEPS also indicated an acceptable fit for the model.

Effect sizes ranged from 0.003 to 0.141, indicating small to medium levels of predictive power, and were observed across the independent variables. The impact of ATAR on SEPS, ESF, and ISMO was the least significant. The predictive relevance was also confirmed, with Q<sup>2</sup> values above zero of 0.157 and 0.193 for ATAR and SEPS, respectively. These results demonstrate that the structural model is adequate for both predictive ability (i.e., it can reasonably approximate the data) and testing hypotheses. The results are shown in the inner model (Figure 2).

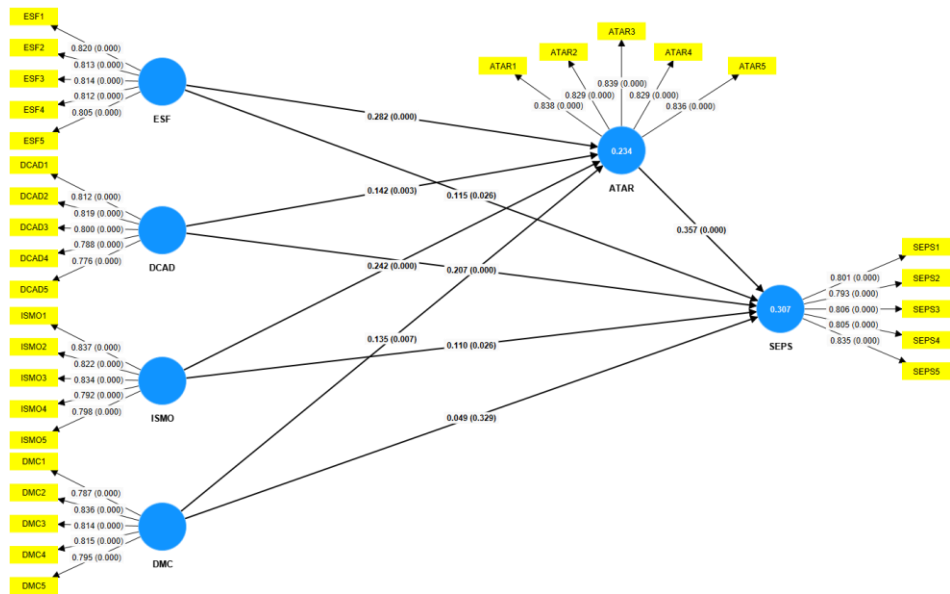


Figure 2. Inner model

Table 7. Collinearity Assessment and Predictive Power

| Endogenous construct | Predictor | VIF   | f <sup>2</sup> | R <sup>2</sup> | Adjusted R <sup>2</sup> | Q <sup>2</sup> |
|----------------------|-----------|-------|----------------|----------------|-------------------------|----------------|
| ATAR                 | ESF       | 1.048 | 0.099          | 0.234          | 0.224                   | 0.157          |
|                      | DCAD      | 1.025 | 0.026          |                |                         |                |
|                      | ISMO      | 1.035 | 0.074          |                |                         |                |
|                      | DMC       | 1.047 | 0.023          |                |                         |                |
| SEPS                 | ATAR      | 1.306 | 0.141          | 0.307          | 0.296                   | 0.193          |
|                      | ESF       | 1.152 | 0.017          |                |                         |                |
|                      | DCAD      | 1.051 | 0.059          |                |                         |                |
|                      | ISMO      | 1.112 | 0.016          |                |                         |                |
|                      | DMC       | 1.071 | 0.003          |                |                         |                |

#### 4.4 Hypothesis Testing

Bootstrapping was performed to examine the direct effects between constructs and assess the statistical significance of the hypothesized relationships. Table 8 presents the regression analysis results. Out of nine constructs, eight showed supported direct relationships, as indicated in Table 8. Educational sustainable financing positively influenced both assistive technology adoption readiness ( $\beta = 0.282$ ,  $t = 6.175$ ,  $p < 0.001$ ) and the sustainability of special education performance ( $\beta = 0.115$ ,  $t = 2.228$ ,  $p = 0.026$ ). Similarly, Disability Corporate Accounting Disclosure significantly impacted assistive technology adoption readiness ( $\beta = 0.142$ ,  $t = 2.988$ ,  $p = 0.003$ ) and the sustainability of special education performance ( $\beta = 0.207$ ,  $t = 4.552$ ,  $p < 0.001$ ).

An inclusive social marketing orientation had a strong positive influence on assistive technology adoption readiness ( $\beta = 0.242$ ,  $t = 5.333$ ,  $p < 0.001$ ) and special education performance sustainability ( $\beta = 0.110$ ,  $t = 2.229$ ,  $p = 0.026$ ). Digital market capability had a substantial indirect effect on the sustainability of special educational performance ( $\beta = 0.135$ ,  $t = 2.689$ ,  $p = 0.007$ ), but no direct effect ( $\beta = 0.049$ ,  $t = 0.977$ ,  $p = 0.329$ ). Consequently, assistive technology adoption readiness exerted the strongest direct influence on the sustainability of special educational performance ( $\beta = 0.357$ ,  $t = 6.781$ ,  $p < 0.001$ ), further affirming its pivotal role in the model.

Table 8. Direct Effect Hypothesis Testing

| Path        | $\beta$ | STDEV | t-value | p-value | 95% CI        |
|-------------|---------|-------|---------|---------|---------------|
| ESF > SEPS  | 0.115   | 0.052 | 2.228   | 0.026   | 0.013, 0.217  |
| DCAD > SEPS | 0.207   | 0.046 | 4.552   | <0.001  | 0.119, 0.296  |
| ISMO > SEPS | 0.110   | 0.049 | 2.229   | 0.026   | 0.015, 0.207  |
| DMC > SEPS  | 0.049   | 0.05  | 0.977   | 0.329   | -0.048, 0.148 |
| ESF > ATAR  | 0.282   | 0.046 | 6.175   | <0.001  | 0.191, 0.373  |
| DCAD > ATAR | 0.142   | 0.048 | 2.988   | 0.003   | 0.050, 0.237  |
| ISMO > ATAR | 0.242   | 0.045 | 5.333   | <0.001  | 0.154, 0.330  |
| DMC > ATAR  | 0.135   | 0.05  | 2.689   | 0.007   | 0.042, 0.238  |
| ATAR > SEPS | 0.357   | 0.053 | 6.781   | <0.001  | 0.253, 0.455  |

#### 4.5 Mediating Role of Assistive Technology Readiness

Bootstrapping was performed to examine the direct effects between constructs and the significance of the hypothesized relationships. Table 8 presents the regression analysis results. Support for direct relationships was found in eight of nine constructs, as shown in Table 8. Educational sustainable financing positively influenced both assistive technology adoption readiness ( $\beta = 0.282$ ,  $t = 6.175$ ,  $p < 0.001$ ) and the sustainability of special education performance ( $\beta = 0.115$ ,  $t = 2.228$ ,  $p = 0.026$ ). Additionally, Disability Corporate Accounting Disclosure significantly contributed to assistive technology adoption readiness ( $\beta = 0.142$ ,  $t = 2.988$ ,

$p = 0.003$ ) and the sustainability of special education performance ( $\beta = 0.207$ ,  $t = 4.552$ ,  $p < 0.001$ ).

An inclusive social marketing orientation had a strong positive influence on assistive technology adoption readiness ( $\beta = 0.242$ ,  $t = 5.333$ ,  $p < 0.001$ ) and special education performance sustainability ( $\beta = 0.110$ ,  $t = 2.229$ ,  $p = 0.026$ ). Digital market capability had a substantial indirect effect on the sustainability of special educational performance ( $\beta = 0.135$ ,  $t = 2.689$ ,  $p = 0.007$ ), but no direct effect ( $\beta = 0.049$ ,  $t = 0.977$ ,  $p = 0.329$ ). Consequently, assistive technology adoption readiness exerted the strongest direct influence on the sustainability of special educational performance ( $\beta = 0.357$ ,  $t = 6.781$ ,  $p < 0.001$ ), further affirming its pivotal role in the model.

Table 9. Indirect Effect Hypothesis Testing

| Indirect path      | $\beta$ | STDEV | t-value | p-value | 95% CI       |
|--------------------|---------|-------|---------|---------|--------------|
| ESF > ATAR > SEPS  | 0.101   | 0.023 | 4.354   | <0.001  | 0.059, 0.150 |
| DCAD > ATAR > SEPS | 0.051   | 0.018 | 2.810   | 0.005   | 0.018, 0.088 |
| ISMO > ATAR > SEPS | 0.086   | 0.021 | 4.133   | <0.001  | 0.050, 0.132 |
| DMC > ATAR > SEPS  | 0.048   | 0.020 | 2.413   | 0.016   | 0.014, 0.091 |

## 5. Discussion

The results suggest that managerial capabilities are significant drivers of sustainable special educational performance, although the impact varies by capability domain. Educational sustainable financing, disability corporate accounting disclosure, and Inclusive Social Marketing Orientation directly affect sustainable performance, but Digital Market Capability does not. This suggests that financial resilience, accountability, and trust among stakeholders are more immediate precursors of sustainable special educational outcomes than digital capability alone. These findings are consistent with the Resource-Based View, which suggests that well-organized institutional resources generate value and lead to improved performance, and with Stakeholder Theory, which proposes that accountability and stakeholder engagement can facilitate the delivery of inclusive educational services (Barney, 1991; Behn et al., 2010; Freeman, 1984; Harris & Neely, 2021).

The positive impact of sustainable financing suggests that institutions with more robust financial planning are better positioned to provide assistive devices. It also suggests that they are better positioned to provide digital infrastructure. Furthermore, they are better positioned to provide software maintenance. And staff training. Since assistive technology requires ongoing investment rather than a one-time purchase, predictable funding and strategic resource allocation will be crucial. This finding reinforces earlier evidence indicating that high-cost, fragmented funding systems and weak support for assistive technology are key barriers to access in low- and middle-income settings (Borg et al., 2011; Cote, 2021; Eide et al., 2023). Additionally, it aligns with recent evidence emphasizing the need for sustainable financing mechanisms to expand coverage of rehabilitation

and assistive technologies in resource-limited contexts (Bachani et al., 2024; Hilal et al., 2025).

Disclosing information about disability in the corporate accounting sector also positively affects the two components of assistive technology readiness and sustainable performance. Transparent reporting of disability-related expenditure, including how much is allocated to accessibility and assistive technology, promotes institutional accountability and increases the confidence of parents, donors, and others. Therefore, disability disclosure serves not only as a compliance measure but also as a governance tool intended to encourage long-term funding for inclusive services. This finding is consistent with both the literature on nonprofit transparency, which suggests that disclosure can enhance credibility and stakeholders' trust in an organization, as well as the ability to secure funding, and the literature on disability inclusion, which indicates that increasing pressure for more data on disability would heighten social and organizational accountability (del Mar Gálvez-Rodríguez et al., 2020; Zhuang et al., 2014).

Readiness and sustainability are further reinforced by an inclusive social marketing approach that promotes disability-sensitive communication, parental involvement, donor engagement, and public support (Hibban Al Asyim Kusuma & Qurrota A'yun, 2025). The adoption of technology in special education depends not only on internal resources but also on acceptance from families, communities, and external supporters. This finding aligns with existing studies that emphasize the vital role of stakeholder engagement in improving the effectiveness of social marketing and strengthening our ability to generate social value (Bris et al., 2021; Buyucek et al., 2016; Zayid Yıldırım & El-Din Fatma, 2025). This is consistent with research on inclusive marketing and disability representation, which suggests that disability-sensitive

communication can lead to greater engagement and inclusion of disabled people and confer institutional legitimacy (Masiello et al., 2024).

While digital market capability enhances an organization's readiness to adopt assistive technology, it does not strongly correlate with sustainable performance. This indicates that although digital platforms, data-driven communication, and online stakeholder engagement can help prepare institutions for technology adoption, they alone do not ensure sustainable results. A supportive ecosystem, including infrastructure, staff skills, and effective policies, is necessary (Kannan et al., 2024). This supports the idea from organizational logic literature that digital capabilities create value only when integrated into routines, strategic planning, and adaptive processes (Verhoef et al., 2021; Warner & Wäger, 2019).

Theoretically, this study builds on the resource-based view, stakeholder theory, and the technology acceptance model by demonstrating that the adoption of assistive technology in special education is a complex management issue. In practice, the findings suggest that school principals, foundation managers, finance officers, accounting managers, and public relations staff should prioritize sustainable budgeting, transparent reporting on disability-related matters, inclusive stakeholder communication, and staff readiness. From a policy perspective, stronger support is needed for financing mechanisms, accountability standards, digital infrastructure, and capacity-building programs in special education institutions. One limitation of this study is its cross-sectional design, which restricts causal interpretation. Using self-reported managerial data and focusing on Indonesian institutions may also limit the generalizability of the findings. In future studies, a longitudinal design should be employed, including teachers and parents. Country or regional comparisons should be made, and leadership, policy support, infrastructure quality, and student learning outcomes should be examined.

## 6. Conclusion

This study examined the influence of managerial capabilities on the readiness to adopt assistive technology and the sustainability of special educational performance. The findings suggest that sustainable educational financing, corporate accounting disclosure regarding disability, and an inclusive social marketing approach can significantly improve long-term performance in special education. In contrast, digital market capability has no significant direct effect on performance. However, all four managerial capabilities significantly improve readiness to adopt assistive technology, which has the strongest positive effect on sustainable performance. Further confirmation of this comes from the mediation results, which show that readiness to adopt assistive technology is a central mechanism through which financial, accounting, marketing, and digital capabilities translate into sustainable institutional outcomes.

The study extends the Resource-Based View, Stakeholder Theory, and the Technology Acceptance Model by showing that the adoption of assistive technology in special education is not merely a matter of teaching methods or technology itself but also a multifaceted management challenge. Sustainable performance depends on an institution's ability to organize financial resources, ensure accountability related to disability, engage stakeholders through inclusive communication, and transform digital capability into practical readiness for technology implementation.

The findings indicate that school principals, foundation managers, finance officers, accounting managers, and public relations officers should focus on long-term budgeting, transparent reporting on disability issues, inclusive communication with stakeholders, enhancing staff digital skills, and developing supportive institutional policies. These strategies are crucial for promoting the adoption of assistive technology and ensuring that special education services remain accessible, accountable, and sustainable.

This study has several limitations. Its cross-sectional design limits the ability to draw causal inferences, and the use of self-reported data from managers

may introduce perceptual biases. Additionally, because the study focuses on Indonesian special education institutions, the findings may not easily apply to other educational systems or countries. Future research should employ longitudinal approaches, include teachers, parents, and students

as respondents, compare institutions across different countries or regions, and explore other variables such as leadership support, digital infrastructure quality, policy implementation, and actual student learning outcomes.

## References

- Adams, D., & Lok, T. K. (2022). Teacher Education in Malaysia: Preparation, Practices, and Future Directions. In *Handbook of Research on Teacher Education: Innovations and Practices in Asia*. [https://doi.org/10.1007/978-981-16-9785-2\\_6](https://doi.org/10.1007/978-981-16-9785-2_6)
- Ainurrohman, S., & Rahmawati, Y. (2024). Sustainable Economic Model for Islamic Boarding Schools: The Role of Sharia Cooperatives, Halal Certification, and Digital Transformation. *Journal International Economic Sharia*, 1(4). <https://doi.org/10.69725/jies.v1i4.282>
- Andreasen, A. R. (2002). Marketing social marketing in the social change marketplace. *Journal of Public Policy and Marketing*, 21(1). <https://doi.org/10.1509/jppm.21.1.3.17602>
- Asdar, A., & Mujahidah. (2024). Effectiveness of Guessing Game in Improving Student Speaking Skills. *Advances Educational Innovation*, 1(1). <https://doi.org/10.69725/aei.v1i1.85>
- Atikah Candraningtyas, M., & Rahmawati, Y. (2025). Digital Capabilities, Islamic Financial Literacy, and Halal Orientation Driving Online MSME Sustainability. *Journal Economic Business Innovation*, 2(3). <https://doi.org/10.69725/jebi.v2i3.317>
- Bachani, A. M., Bentley, J. A., Kautsar, H., Neill, R., & Trujillo, A. J. (2024). Suggesting global insights to local challenges: expanding financing of rehabilitation services in low and middle-income countries. In *Frontiers in Rehabilitation Sciences* (Vol. 5). <https://doi.org/10.3389/fresc.2024.1305033>
- Bailatul Nur Avian, Z., & Putro Wibowo, E. (2024). Corporate Governance Responses to Hidden Institutional Complexity in Emerging Market Multinationals. *Advances in Management Innovation*, 1(1). <https://doi.org/10.69725/ami.v1i1.235>
- Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1). <https://doi.org/10.1177/014920639101700108>
- Behn, B. K., DeVries, D. D., & Lin, J. (2010). The determinants of transparency in nonprofit organizations: An exploratory study. *Advances in Accounting*, 26(1). <https://doi.org/10.1016/j.adiac.2009.12.001>
- Borg, J., Lindström, A., & Larsson, S. (2011). Assistive technology in developing countries: A review from the perspective of the Convention on the Rights of Persons with Disabilities. *Prosthetics and Orthotics International*, 35(1). <https://doi.org/10.1177/0309364610389351>
- Bris, A., Wang, T. Y. H., Zatzick, C. D., Miller, D. J. P., Fern, M. J., Cardinal, L. B., Gregoire, D. A., Shepherd, D. A., Westphal, J. D., Shani, G., Troster, C., Van Quaquebeke, N., Lanaj, K., Hollenbeck, J. R., Ilgen, D. R., Barnes, C. M., Harmon, S. J., Feldman, E. R., DesJardine, M. R., ... Sangiorgi, F. (2021). KNIGHTS, RAIDERS, AND TARGETS - THE IMPACT OF THE HOSTILE TAKEOVER - COFFEE,JC, LOWENSTEIN,L, ROSEACKERMAN,S. *JOURNAL OF BANKING & FINANCE*, 37(1).
- Buyucek, N., Kubacki, K., Rundle-Thiele, S., & Pang, B. (2016). A systematic review of stakeholder involvement in social marketing interventions. *Australasian Marketing Journal*, 24(1). <https://doi.org/10.1016/j.ausmj.2015.11.001>
- Castillo, E., & Roberts, R. (2024). Sustainability and impact reporting in US higher education anchor institutions. *Journal of Accounting Literature*. <https://doi.org/10.1108/JAL-01-2024-0003>

- Cossu, M., Estes, Z., & Vosgerau, J. (2026). Beyond Visibility: The Disability Inclusion Effect in Advertising. In *Journal of Marketing*.  
<http://openaccess.city.ac.uk/publications@citystgeorges.ac.ukPermanentrepositorylink:https://openaccess.city.ac.uk/id/eprint/37335/>
- Cote, A. (2021). Social protection and access to assistive technology in low- and middle-income countries. *Assistive Technology*, 33(sup1). <https://doi.org/10.1080/10400435.2021.1994052>
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly: Management Information Systems*, 13(3). <https://doi.org/10.2307/249008>
- Debasu, H., & Yitayew, A. (2024). Examining Elements of Designing and Managing of Creating Inclusive Learning Environment: Systematic Literature Review. *International Journal of Special Education*, 39(1). <https://doi.org/10.52291/ijse.2024.39.4>
- del Mar Gálvez-Rodríguez, M., López-Godoy, M., & del Carmen Caba-Pérez, M. (2020). Accountability, transparency, and voluntary disclosure in nonprofit organizations. In *Financing Nonprofit Organizations*. <https://doi.org/10.4324/9780429265419-6>
- Dethier, F., Delcourt, C., & Dessart, L. (2024). Donor Perceptions of Nonprofit Organizations' Transparency: Conceptualization and Operationalization. *Nonprofit and Voluntary Sector Quarterly*, 53(5). <https://doi.org/10.1177/08997640231211212>
- Dwianto, A., Nur Rahman, A., Itsnaini Ulynnuha, O., Anam, K., & Mohammed Sultan Saif, G. (2024). The Impact of Technology Readiness, Usefulness, and Ease of Use on AI-Based Accounting Software Adoption. *Advances in Accounting Innovation*, 1(1). <https://doi.org/10.69725/aa.v1i1.87>
- Eide, A. H., Muller, S., Zhang, W., Khasnabis, C., Antypas, K., Blakstad, M., & Borg, J. (2023). Barriers for Accessing Assistive Products in Low- and Middle-Income Countries (LMICs). *Studies in Health Technology and Informatics*, 306. <https://doi.org/10.3233/SHTI230634>
- Finlayson, M., & Hammel, J. (2003). Providing Alternative Financing for Assistive Technology: Outcomes Over Twenty Months. *Journal of Disability Policy Studies*, 14(2). <https://doi.org/10.1177/10442073030140020901>
- Freeman, R. E. (1984). Strategic Management: A Stakeholder Approach. Pitman: London. In *Business Ethics Quarterly* (Vol. 4, Number 4).
- Hair, J., & Alamer, A. (2022). Partial Least Squares Structural Equation Modeling (PLS-SEM) in second language and education research: Guidelines using an applied example. *Research Methods in Applied Linguistics*, 1(3). <https://doi.org/10.1016/j.rmal.2022.100027>
- Hao, Z., Cao, J., Li, R., Yu, J., Liu, Z., & Zhang, Y. (2026). Mapping student-AI interaction dynamics in multi-agent learning environments: Supporting personalized learning and reducing performance gaps. *Computers and Education*, 241. <https://doi.org/10.1016/j.compedu.2025.105472>
- Harris, E. E., & Neely, D. (2021). Determinants and Consequences of Nonprofit Transparency. *Journal of Accounting, Auditing and Finance*, 36(1). <https://doi.org/10.1177/0148558X18814134>
- Hibban Al Asyim Kusuma, F., & Qurrota A'yun, A. (2025). Leveraging Dynamic Capabilities and Digital Culture for Sustainable Business Model Innovation. *Journal Economic Business Innovation*, 2(3). <https://doi.org/10.69725/jebi.v2i3.279>
- Hilal, M. A., Puspitasari, D., & Hilal, M. A. (2025). Policy and Ecosystem Pathways to Inclusive Women-Led Digital Venture Growth. *Jurnal Inovasi Pajak Indonesia (JIPi)*, 2(2), 92–101. <https://doi.org/10.69725/jipi.v2i2.334>
- Kannan, R., Akila, J., & Elenche Zhia, E. (2024). Enhancing Education Quality: The Transformative Role of ICT in Modern Teaching and Learning. *Advances Educational Innovation*, 1(2). <https://doi.org/10.69725/aei.v1i2.148>

- Kirkpatrick, A. W., McKee, J. L., McBeth, P. B., Ball, C. G., Laporta, A. T., Broderick, T., Leslie, T., King, D., Wright Beatty, H. E., Keillor, J., Tien, H., de'Angelis, N., Khan, J., Marchegiani, F., Bianchi, G., Aisoni, F., Alberti, D., Ansaloni, L., Biffi, W. L., ... MOORI, S. H. (2020). Translating Scientific Evidence into Practice using Digital Medicine and Electronic Patient Reported Outcomes. *Telemedicine and E-Health*, 17(1).
- Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of E-Collaboration*, 11(4). <https://doi.org/10.4018/ijec.2015100101>
- Ligorio, L., Palazzo, G., & Marchetti, S. (2025). Divergence in disability reporting: assessing SDG alignment in corporate sustainability disclosures. *Measuring Business Excellence*, 29(2). <https://doi.org/10.1108/MBE-07-2024-0109>
- Lojunt, M., Lie, S. lie, & Li, F. L. (2024). Revolutionising education: In the midst of the COVID-19 crisis and its global implications, China pioneers online learning strategies. *Advances Educational Innovation*, 1(2). <https://doi.org/10.69725/aei.v1i2.147>
- Ly, L. W., Jhonly, K., & Wang, L. (2025). Cross Cultural Examination of Students Attitudes and Intentions Towards AI in Higher Education. *Advances Educational Innovation*, 1(3).
- Maecker, O., Barrot, C., & Becker, J. U. (2016). The effect of social media interactions on customer relationship management. *Business Research*, 9(1). <https://doi.org/10.1007/s40685-016-0027-6>
- Martinez-Ortigosa, A., Martinez-Granados, A., Gil-Hernández, E., Rodriguez-Arrastia, M., Ropero-Padilla, C., & Roman, P. (2023). Applications of Artificial Intelligence in Nursing Care: A Systematic Review. In *Journal of Nursing Management* (Vol. 2023). <https://doi.org/10.1155/2023/3219127>
- Masiello, B., Garofano, A., Izzo, F., & Bonetti, E. (2024). Inclusive marketing and disability: value creation strategies for organisations and society in the toy industry. *Journal of Marketing Management*, 40(9–10). <https://doi.org/10.1080/0267257X.2024.2380252>
- Mullin, C., Gould, R., Harris, S. P., & Jones, R. (2024). Updated trends in disability, diversity, and corporate social responsibility. *Journal of Vocational Rehabilitation*, 61(2). <https://doi.org/10.3233/JVR-240032>
- Murtono, & Prayitno, M. (2025). Postgraduate Learning Innovation in the Age of Artificial Intelligence. *Advances Educational Innovation*, 1(3 SE-Articles).
- Pang, J. C., Lee, F. Y., Chin, L. H., Ng, P. L., & Te, S. Y. (2024). E-Learning Instructional Management for Students with Intellectual Disabilities. *International Journal of Special Education*, 39(1). <https://doi.org/10.52291/ijse.2024.39.1>
- Perdana Putri, A., & Dwianto, A. (2025). Enhancing Perceived Employability through Digital, Analytical, and AI Oriented Skills in Accounting. *Advances in Accounting Innovation*, 1(2), 188–198. <https://doi.org/10.69725/aei.v1i2.195>
- Rina, L., Kaira, L., Mohammed Sultan Saif, G., & Setyaningsih, W. (2024). The Contribution of Artificial Intelligence Technology to the Learning Process of Accounting Students in the Digital Era and Learning Ethics. *Advances Educational Innovation*, 1(1). <https://doi.org/10.69725/aei.v1i1.83>
- Rizani, A., & Daengs GS, A. (2026). Digital Accountability Management Paradox Resolving Controls with AI Blockchain Assurance for Sustainability Performance. *Journal Economic Business Innovation*, 2(4), 563–579. <https://doi.org/10.69725/jebi.v2i4.338>
- Rizani, A., Darsono, T., Mohammed, G., & Saif, S. (2026). Economic Policy Stability, Digital Governance Capability, and Artificial Intelligence Innovation Performance. *Journal Economic Business Innovation*, 3(1), 12–28. <https://doi.org/10.69725/jebi.v3i1.342>
- Saini, R., Nordin, Z. S., Hashim, M. H., & Abol, M. T. (2024). Universal Design for Learning (UDL) to Facilitate the Learning of Students with Intellectual Disabilities within the Inclusive Educational Context in Sarawak, East Malaysia. *International Journal of Special Education*, 39(2). <https://doi.org/10.52291/ijse.2024.39.18>

- Saxton, G. D., Kuo, J. S., & Ho, Y. C. (2012). The Determinants of Voluntary Financial Disclosure by Nonprofit Organizations. *Nonprofit and Voluntary Sector Quarterly*, 41(6). <https://doi.org/10.1177/0899764011427597>
- Shmueli, G., Sarstedt, M., Hair, J. F., Cheah, J. H., Ting, H., Vaithilingam, S., & Ringle, C. M. (2019). Predictive model assessment in PLS-SEM: guidelines for using PLSpredict. *European Journal of Marketing*, 53(11). <https://doi.org/10.1108/EJM-02-2019-0189>
- Tornatzky, L. G., & Fleischer, Mitchell. (1990). The processes of technological innovation | SpringerLink. *D.C. Heath & Company*.
- Tortora, D., Chierici, R., Farina Briamonte, M., & Tiscini, R. (2021). 'I digitize so I exist'. Searching for critical capabilities affecting firms' digital innovation. *Journal of Business Research*, 129. <https://doi.org/10.1016/j.jbusres.2021.02.048>
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly: Management Information Systems*, 27(3). <https://doi.org/10.2307/30036540>
- Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Qi Dong, J., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research*, 122. <https://doi.org/10.1016/j.jbusres.2019.09.022>
- Warner, K. S. R., & Wäger, M. (2019). Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long Range Planning*, 52(3). <https://doi.org/10.1016/j.lrp.2018.12.001>
- WHO. (2011). International perspectives on spinal cord injury (IPSCI). *Topics in Spinal Cord Injury Rehabilitation*, 16.
- Widayati, C. (2025). Digital Climate Governance, ESG Innovation, and Carbon Risk Management on Credit Risk. *Advances in Management Innovation*, 1(2 SE-Article Full).
- World Health Organization, W. (2015). *Rehabilitation 2030 initiative*. World Health Organization, WHO.
- Xinyu, H., Mei, G., Jingxuan, Z., & Jia, Y. (2026). Construction of Evaluation Indicators for the Public Health System in Primary and Secondary Schools — Beijing, China, 2024–2025. *China CDC Weekly*, 8(1). <https://doi.org/10.46234/ccdcw2026.004>
- Xu, W. (Wayne), & Saxton, G. D. (2019). Does Stakeholder Engagement Pay Off on Social Media? A Social Capital Perspective. *Nonprofit and Voluntary Sector Quarterly*, 48(1). <https://doi.org/10.1177/0899764018791267>
- Yang, L., Xu, C., & Wan, G. (2019). Exploring the impact of TMTs' overseas experiences on innovation performance of Chinese enterprises: The mediating effects of R&D strategic decision-making. *Chinese Management Studies*, 13(4). <https://doi.org/10.1108/CMS-12-2018-0791>
- Zayid Yildirim, M., & El-Din Fatma, A. (2025). Gender Awareness and Donor Participation: Transforming Zakat Distribution for Enhanced Community Welfare. *Journal International Economic Sharia*, 2(1). <https://doi.org/10.69725/jies.v2i1.285>
- Zhu, K., Kraemer, K. L., & Xu, S. (2006). The process of innovation assimilation by firms in different countries: A technology diffusion perspective on e-business. *Management Science*, 52(10). <https://doi.org/10.1287/mnsc.1050.0487>
- Zhuang, J., Saxton, G. D., & Wu, H. (2014). Publicity vs. impact in nonprofit disclosures and donor preferences: a sequential game with one nonprofit organization and N donors. *Annals of Operations Research*, 221(1). <https://doi.org/10.1007/s10479-011-0967-3>

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