

BAB V

PENUTUP

Bab ini merupakan bagian akhir yang merangkum hasil utama dari penelitian yang telah dilaksanakan. Pada bab ini disajikan kesimpulan yang menjawab tujuan penelitian, implikasi manajerial yang dapat diterapkan oleh perusahaan bank digital di Indonesia, serta keterbatasan penelitian yang perlu menjadi perhatian. Selain itu, disampaikan pula saran untuk penelitian selanjutnya sebagai kontribusi bagi pengembangan kajian di masa mendatang. Melalui pembahasan pada bab ini, diharapkan penelitian ini dapat memberikan manfaat baik secara akademis maupun praktis.

5.1 Kesimpulan

Berdasarkan hasil analisis data dan pembahasan, penelitian ini bertujuan untuk menguji pengaruh transformasi digital terhadap fleksibilitas kerja jarak jauh dan keterikatan karyawan dengan *Green Human Resource Management* (GHRM) sebagai variabel mediasi pada karyawan bank digital di Indonesia. Adapun kesimpulan yang dapat ditarik dari penelitian ini adalah sebagai berikut:

1. Pengaruh Transformasi Digital terhadap *Green Human Resource Management* (GHRM)

Transformasi digital berpengaruh positif dan signifikan terhadap *Green Human Resource Management* (GHRM). Temuan ini sejalan dengan penelitian Vial (2019), Trujillo-Gallego *et al.*, (2022), Sahu *et al.*, (2025) dan Meher *et al.*, (2026) yang menyatakan bahwa transformasi digital memiliki efek positif yang signifikan terhadap praktik *Green Human Resource Management* (GHRM). Hal ini membuktikan bahwa digitalisasi di sektor perbankan memungkinkan organisasi meningkatkan efisiensi penggunaan sumber daya melalui optimalisasi proses berbasis teknologi.

2. Pengaruh *Green Human Resource Management* (GHRM) terhadap fleksibilitas kerja jarak jauh

Green Human Resource Management (GHRM) berpengaruh positif dan signifikan terhadap fleksibilitas kerja jarak jauh. Temuan ini sejalan dengan Tabrizi *et al.*, (2023), dan Ishteyaq *et al.*, (2024) yang mengindikasikan bahwa semakin kuat implementasi praktik *Green Human Resource Management* (GHRM) dalam suatu organisasi menghasilkan semakin tinggi pula tingkat fleksibilitas kerja jarak jauh yang dirasakan oleh karyawan. Hal ini membuktikan bahwa semakin kuat implementasi praktik *Green Human Resource Management* (GHRM) dalam organisasi bank digital, semakin tinggi pula tingkat fleksibilitas kerja jarak jauh yang dirasakan oleh karyawan. Praktik *Green Human Resource Management*

(GHRM) seperti evaluasi kinerja berbasis hasil dan pengembangan budaya kerja berkelanjutan turut memfasilitasi terciptanya pengaturan kerja yang mandiri dan tidak terikat lokasi.

3. Pengaruh *Green Human Resource Management (GHRM)* terhadap keterikatan karyawan

Green Human Resource Management (GHRM) berpengaruh positif dan signifikan terhadap keterikatan karyawan. Temuan ini sejalan dengan penelitian Mousa dan Othman (2020), Maheshwari *et al.*, (2024), dan Gupta dan Jangra (2024) yang mengindikasikan bahwa semakin kuat implementasi praktik *Green Human Resource Management (GHRM)* dalam organisasi bank digital, maka semakin tinggi pula tingkat keterikatan karyawan terhadap pekerjaannya. Hal ini membuktikan bahwa semakin kuat implementasi praktik *Green Human Resource Management (GHRM)* dalam organisasi bank digital, semakin tinggi pula tingkat keterikatan karyawan terhadap pekerjaannya. Karyawan yang merasakan keselarasan nilai antara diri mereka dengan organisasi cenderung menunjukkan keterpusatan penuh (*absorption*), dedikasi (*dedication*), dan semangat (*vigor*) yang lebih tinggi dalam bekerja.

4. Peran Mediasi *Green Human Resource Management* (GHRM) terhadap fleksibilitas kerja jarak jauh

Green Human Resource Management (GHRM) memediasi secara parsial pengaruh transformasi digital terhadap fleksibilitas kerja jarak jauh. Temuan ini sejalan dengan Haldorai *et al.*, (2022), Sahu *et al.*, (2025), dan Meher *et al.*, (2026). Hal ini membuktikan bahwa transformasi digital memengaruhi fleksibilitas kerja jarak jauh tidak hanya secara langsung, tetapi juga secara tidak langsung melalui *Green Human Resource Management* (GHRM) sebagai variabel perantara. *Green Human Resource Management* (GHRM) berfungsi sebagai jembatan yang mengubah potensi teknologi menjadi fleksibilitas nyata yang dirasakan oleh karyawan dalam keseharian kerja mereka.

5. Peran Mediasi *Green Human Resource Management* (GHRM) terhadap keterikatan karyawan

Green Human Resource Management (GHRM) memediasi secara parsial pengaruh transformasi digital terhadap keterikatan karyawan. Temuan ini sejalan dengan Gupta dan Jangra (2024), dan Ly & Ly (2025). Hal ini membuktikan bahwa sinergi antara transformasi digital dan *Green Human Resource Management* (GHRM) mampu menciptakan lingkungan kerja yang berkelanjutan sekaligus berprestasi tinggi bagi karyawan bank digital di Indonesia. Kombinasi keduanya menciptakan identitas organisasi

yang kuat dan menarik secara psikologis, sehingga mendorong karyawan untuk semakin terikat dengan peran dan tujuan kerja mereka.

Hasil tersebut menunjukkan bahwa penelitian ini membuktikan transformasi digital saja tidak cukup untuk meningkatkan fleksibilitas kerja jarak jauh dan keterikatan karyawan. Diperlukan praktik *Green Human Resource Management* (GHRM) sebagai mekanisme penghubung yang menerjemahkan kapabilitas digital menjadi pengaturan kerja yang berkelanjutan dan pengalaman kerja yang bermakna bagi karyawan. Kelima hipotesis yang diajukan dalam penelitian ini seluruhnya didukung secara signifikan.

5.2 Implikasi Manajerial

Berdasarkan hasil penelitian ini, terdapat beberapa implikasi praktis yang dapat diterapkan oleh manajemen bank digital di Indonesia untuk meningkatkan fleksibilitas kerja jarak jauh dan keterlibatan kerja karyawan melalui penguatan transformasi digital dan praktik-*Green Human Resources Management* (GHRM). Implikasi ini diharapkan dapat menjadi pedoman bagi pihak manajemen dalam merancang kebijakan dan program yang lebih efektif dalam pengelolaan sumber daya manusia di era digital.

1. Penguatan Investasi dalam Transformasi Digital

Penelitian ini membuktikan bahwa transformasi digital berpengaruh positif terhadap *Green Human Resources Management* (GHRM), fleksibilitas kerja jarak jauh, dan keterlibatan kerja.

Shanti *et al.*, (2023) menyatakan bahwa digitalisasi di sektor perbankan memungkinkan organisasi meningkatkan efisiensi penggunaan sumber daya melalui optimalisasi proses berbasis teknologi. Kitsios *et al.*, (2021) menegaskan bahwa transformasi digital di perbankan bertujuan mengurangi biaya operasional dan menciptakan diferensiasi dari pesaing. Oleh karena itu, bank digital di Indonesia perlu terus mengembangkan infrastruktur teknologi digital yang memadai, seperti sistem komputasi awan dan platform kolaborasi virtual.

2. Optimalisasi Praktik *Green Human Resource Management* (GHRM)

Hasil penelitian menunjukkan bahwa *Green Human Resource Management* (GHRM) berperan penting dalam memediasi hubungan antara transformasi digital dengan fleksibilitas kerja jarak jauh dan keterlibatan kerja. Noor *et al.*, (2023) mengonfirmasi bahwa praktik *Green Human Resource Management* (GHRM), seperti rekrutmen hijau dan pelatihan berwawasan lingkungan, berhubungan positif dan signifikan dengan keterlibatan karyawan di sektor perbankan Indonesia. Rahim *et al.*, (2025) menambahkan bahwa praktik pengurangan penggunaan kertas melalui digitalisasi tidak hanya mendukung infrastruktur digital tetapi juga menumbuhkan rasa tanggung jawab kolektif di antara karyawan. Oleh karena itu, manajemen bank digital disarankan untuk mengintegrasikan prinsip keberlanjutan lingkungan ke dalam kebijakan perusahaan.

3. Pengembangan Kebijakan Fleksibilitas Kerja Jarak Jauh yang Berkelanjutan

Temuan penelitian ini mengonfirmasi bahwa *Green Human Resource Management* (GHRM) memfasilitasi fleksibilitas kerja jarak jauh. Bernard (2025) menemukan bahwa model kerja seperti *telecommuting* dan *mobile work* secara signifikan dapat meningkatkan produktivitas karyawan di sektor perbankan. Ruzele *et al.*, (2024) juga mengamati bahwa pengaturan kerja jarak jauh yang semasa pandemi COVID-19 menjadi sebuah keharusan, kini telah menjadi bagian permanen dari model operasional berbagai organisasi, termasuk perbankan. Oleh karena itu, bank digital di Indonesia disarankan untuk merancang kebijakan kerja jarak jauh yang terstruktur dan berkelanjutan melalui penyediaan perangkat dan infrastruktur digital yang memadai, penerapan sistem evaluasi kinerja *outcome based*, serta penyelenggaraan program kesejahteraan karyawan yang mendukung keseimbangan kehidupan kerja dan kehidupan pribadi (*work-life balance*).

4. Strategi Peningkatan Keterlibatan Kerja Karyawan

Keterlibatan kerja karyawan terbukti dipengaruhi secara positif oleh *Green Human Resource Management* (GHRM). Priyatama *et al.*, (2026) menegaskan bahwa transformasi digital telah mengubah secara fundamental cara karyawan bekerja, berinteraksi, dan berinovasi, yang pada gilirannya berdampak

langsung pada kinerja individu dan organisasi. Schaufeli *et al.*, (2006) mendefinisikan keterlibatan kerja sebagai keadaan positif yang ditandai dengan adanya energi (*vigor*), dedikasi (*dedication*), dan keterpusatan penuh (*absorption*) dalam pekerjaan. Oleh karena itu, manajemen bank digital di Indonesia perlu merancang strategi yang mendorong keterlibatan kerja karyawan melalui komunikasi yang transparan, pemberian kesempatan kepada karyawan untuk terlibat dalam inisiatif lingkungan organisasi, serta penciptaan lingkungan kerja yang positif dan inklusif.

5.3 Keterbatasan Penelitian

Dalam penelitian ini, peneliti menyadari adanya beberapa keterbatasan yang perlu disampaikan. Penyampaian keterbatasan ini bertujuan agar hasil penelitian dapat dipahami secara lebih objektif, serta menjadi dasar bagi pengembangan penelitian selanjutnya. Adapun keterbatasan dalam penelitian ini adalah sebagai berikut:

1. Keterbatasan Lingkup Penelitian

Penelitian ini dilakukan dalam konteks perusahaan perbankan digital di Indonesia, sehingga hasil yang diperoleh belum tentu dapat digeneralisasikan pada sektor perusahaan lain yang memiliki karakteristik berbeda.

2. Metode Pengumpulan Data

Data dalam penelitian ini dikumpulkan melalui metode *self-report* menggunakan kuesioner. Hair *et al.*, (2019) dalam penelitiannya menjelaskan bahwa penggunaan satu sumber data berpotensi menimbulkan *common method bias*. Oleh karena itu, penelitian selanjutnya disarankan menggunakan metode tambahan seperti wawancara atau observasi untuk memperoleh hasil yang lebih komprehensif.

3. Desain Penelitian

Penelitian ini menggunakan desain *cross-sectional* yang hanya menggambarkan kondisi pada satu periode waktu. Sekaran dan Bougie (2016) menyatakan bahwa penelitian ini tidak mampu mengevaluasi dalam menangkap variabel secara berkelanjutan. Oleh karena itu, penelitian selanjutnya disarankan menggunakan pendekatan longitudinal agar dapat memahami hubungan kausal secara lebih mendalam.

Dengan memperhatikan keterbatasan-keterbatasan tersebut, diharapkan hasil penelitian ini dapat digunakan secara lebih bijak, serta menjadi landasan bagi penelitian selanjutnya yang lebih luas dan mendalam dalam mengkaji keterlibatan kerja dalam konteks transformasi digital dan praktik sumber daya manusia berkelanjutan.

4. Instrumen Pengukuran

Item kuesioner variabel *Green Human Resource Management* (GHRM) dalam penelitian ini diadaptasi dari instrumen jurnal yang dikembangkan oleh Hameed *et al.*, (2020) dengan penyesuaian dari sudut pandang deskriptif-observatif. Secara substansi, hal ini berpotensi menggeser fokus pengukuran dari persepsi atas praktik aktual organisasi menjadi sikap responden terhadap praktik tersebut. Pergeseran ini belum diuji secara formal melalui validasi konten, sehingga konsistensi makna konstruk dengan literatur acuan tidak dapat dipastikan sepenuhnya.

5.4 Saran Penelitian Selanjutnya

Sebagai tindak lanjut dari keterbatasan penelitian ini, terdapat beberapa saran yang dapat menjadi acuan bagi penelitian selanjutnya agar menghasilkan temuan yang lebih komprehensif dan mendalam. Berdasarkan keterbatasan tersebut, saran untuk penelitian selanjutnya adalah sebagai berikut:

1. Memperluas Objek Penelitian

Penelitian selanjutnya dapat dilakukan pada berbagai organisasi di sektor yang berbeda, baik BUMN, swasta, maupun perusahaan berbasis digital, untuk memperoleh gambaran yang lebih luas dari variabel – variabel yang ada. Dengan memperluas objek penelitian, hasil yang

diperoleh akan lebih general dan relevan untuk berbagai konteks organisasi dengan karakteristik yang berbeda.

2. Menggunakan Metode Longitudinal

Penelitian selanjutnya memiliki harapan agar dapat melihat hubungan kausal secara lebih kuat untuk menggunakan desain penelitian longitudinal. Dengan pengamatan dalam rentang waktu tertentu, peneliti dapat menangkap perubahan dinamis dari variabel – variabel yang dipakai, sehingga kesimpulan yang dihasilkan menjadi lebih akurat dan mendalam.

3. Penggunaan Metode Pengumpulan Data yang Lebih Beragam

Penelitian selanjutnya disarankan untuk mengambil pengumpulan data *mixed-methods* yang menggabungkan survei dengan wawancara mendalam atau observasi langsung dapat menjadi alternatif yang lebih kuat. Hal ini penting karena data yang bersumber dari laporan diri responden rentan terhadap bias persepsi, di mana karyawan cenderung memberikan jawaban yang dianggap sosial atau normatif daripada kondisi yang sesungguhnya.

Adanya saran – saran penelitian ini diharapkan mampu berkontribusi pada penelitian di masa mendatang khususnya dalam penelitian di bidang sumber daya manusia.

4. Validasi Instrumen secara Lebih Ketat

Penelitian selanjutnya yang mengadaptasi item kuesioner dari jurnal Hameed *et al.*, (2020) disarankan untuk mempertahankan arah konstruk asli. Hal ini penting untuk memastikan item yang digunakan secara benar dalam merefleksikan konstruk yang dimaksud sesuai teori acuan.



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LAMPIRAN

Lampiran 1. Kuesioner Data Responden

Kuesioner Penelitian: Pengaruh Transformasi Digital terhadap Fleksibilitas Kerja Jarak Jauh dan Keterikatan Karyawan dengan Mediasi *Green Human Resource Management* pada Karyawan Perbankan Digital di Indonesia

Yth. Bapak/Ibu

Perkenalkan saya **Gerardus Axel Rafaelo**, mahasiswa Program Studi Manajemen, Fakultas Bisnis dan Ekonomika, Universitas Atma Jaya Yogyakarta. Saat ini sedang menjalankan penelitian tugas sebagai bagian dari penyusunan skripsi.

Penelitian ini berjudul "**Pengaruh Transformasi Digital terhadap Fleksibilitas Kerja Jarak Jauh dan Keterikatan Karyawan dengan Mediasi *Green Human Resource Management* pada Karyawan Perbankan Digital di Indonesia.**"

Sehubungan dengan hal tersebut, saya memohon partisipasi Bapak/Ibu untuk dapat mengisi kuesioner ini. Kesiediaan Bapak/Ibu sebagai responden sangat berarti bagi keberhasilan penelitian ini. Seluruh jawaban yang diberikan akan **dijaga kerahasiaannya** dan hanya digunakan untuk kepentingan penelitian akademik.

KRITERIA RESPONDEN :

- Responden merupakan karyawan tetap perusahaan Bank Digital di Indonesia.
- Responden telah bekerja minimal dua tahun.
- Responden bekerja secara fleksibel atau bekerja secara jarak jauh.

Jika terdapat pertanyaan terkait kuesioner ini, Anda dapat menghubungi :
Whatsapp : 087809274397 (Axel)

Atas perhatian dan kesediaan Bapak/Ibu dalam berpartisipasi pada penelitian ini, saya ucapkan terima kasih.

Salam hangat,

Gerardus Axel Rafaelo

Kuesioner Penelitian: Pengaruh Transformasi Digital terhadap Fleksibilitas Kerja Jarak Jauh dan Keterikatan Karyawan dengan Mediasi *Green Human Resource Management* pada Karyawan Perbankan Digital di Indonesia

* Indicates required question

Pertanyaan Filter 1

Apakah anda bekerja di perusahaan Bank Digital di Indonesia? *

- ☐ Ya
- ☐ Tidak

Kuesioner Penelitian: Pengaruh Transformasi Digital terhadap Fleksibilitas Kerja Jarak Jauh dan Keterikatan Karyawan dengan Mediasi *Green Human Resource Management* pada Karyawan Perbankan Digital di Indonesia

* Indicates required question

Pertanyaan Filter 2

Apakah anda telah bekerja minimal dua tahun? *

- ☐ Ya
☐ Tidak

Kuesioner Penelitian: Pengaruh Transformasi Digital terhadap Fleksibilitas Kerja Jarak Jauh dan Keterikatan Karyawan dengan Mediasi *Green Human Resource Management* pada Karyawan Perbankan Digital di Indonesia

* Indicates required question

Pertanyaan Filter 3

Apakah anda bekerja secara fleksibel atau bekerja secara jarak jauh? *

- ☐ Ya
☐ Tidak

Kuesioner Penelitian: Pengaruh Transformasi Digital terhadap Fleksibilitas Kerja Jarak Jauh dan Keterikatan Karyawan dengan Mediasi *Green Human Resource Management* pada Karyawan Perbankan Digital di Indonesia

* Indicates required question

DATA DIRI RESPONDEN

Silakan mengisi data berikut ini sesuai dengan kondisi Anda yang sebenarnya. Data yang diberikan hanya digunakan untuk kebutuhan analisis penelitian. Identitas responden dijamin kerahasiaannya

Nama Perusahaan Bank Digital *

- ☐ PT Bank Digital BCA
- ☐ PT Bank Seabank Indonesia
- ☐ PT Bank Jago Tbk.
- ☐ PT Bank Neo Commerce Tbk.
- ☐ PT Super Bank Indonesia
- ☐ PT Allo Bank Indonesia Tbk.
- ☐ PT Bank Sagu Indonesia
- ☐ Other: _____

Jenis Kelamin *

- ☐ Laki - laki
- ☐ Perempuan

Usia *

- ☐ < 25 tahun
- ☐ 25 - 34 tahun
- ☐ 35 - 44 tahun
- ☐ 45 - 54 tahun
- ☐ > 55 tahun

Pendidikan Terakhir *

- ☐ SMA/TK
- ☐ D3
- ☐ S1
- ☐ S2
- ☐ S3

Jabatan *

- ☐ Staff
- ☐ Team Leader
- ☐ Kepala Divisi / Departemen
- ☐ Direktur

Divisi *

- ☐ IT & Digital
- ☐ Risk, Compliance & Legal
- ☐ Business & Finance
- ☐ People & Operations

Lama Bekerja *

- ☐ 2 tahun
- ☐ 3 tahun
- ☐ 4 tahun
- ☐ 5 tahun

Lampiran 2. Pernyataan terkait Transformasi Digital

TRANSFORMASI DIGITAL

Transformasi digital merupakan proses integrasi teknologi digital ke dalam seluruh aspek operasional perusahaan yang mengubah cara perusahaan bekerja, berinteraksi, dan menciptakan nilai. Hal ini diukur berdasarkan persepsi karyawan terhadap sejauh mana perusahaan telah mengintegrasikan teknologi digital ke dalam proses kerja dan sistem operasional.

Petunjuk
Berikut adalah pilihan jawaban yang tersedia. Pilihlah sejauh mana Anda setuju pada setiap pernyataan dengan skala berikut:

1 = Sangat Tidak Setuju
2 = Tidak Setuju
3 = Netral
4 = Setuju
5 = Sangat Setuju

Digitalisasi membuka peluang yang besar dalam mendorong kemajuan ekonomi dan masyarakat. *

1 2 3 4 5

Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju

Digitalisasi menawarkan potensi besar bagi pengembangan profesional saya di bank digital ini. *

1 2 3 4 5

Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju

Digitalisasi menawarkan potensi besar bagi pengembangan pribadi saya. *

1 2 3 4 5

Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju

Digitalisasi menyebabkan beban tambahan dalam pekerjaan saya. *

1 2 3 4 5

Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju

Digitalisasi membuat stres dalam kehidupan sehari-hari saya. *

1 2 3 4 5

Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju

Lampiran 3. Pernyataan terkait *Green Human Resource Management* (GHRM)

GREEN HUMAN RESOURCE MANAGEMENT (GHRM)						
<i>Green Human Resource Management</i> (GHRM) merupakan pendekatan manajemen sumber daya manusia yang mengintegrasikan tujuan keberlanjutan lingkungan ke dalam kebijakan dan praktik perusahaan. Dalam penelitian ini, GHRM dipahami sebagai persepsi karyawan terhadap sejauh mana perusahaan mengintegrasikan nilai keberlanjutan lingkungan ke dalam kebijakan dan praktik sumber daya manusia. Petunjuk Berikut adalah pilihan jawaban yang tersedia. Pilihlah sejauh mana Anda setuju pada setiap pernyataan dengan skala berikut: 1 = Sangat Tidak Setuju 2 = Tidak Setuju 3 = Netral 4 = Setuju 5 = Sangat Setuju						
Saya mendukung kebijakan perusahaan untuk menjaga tujuan ramah lingkungan dalam bekerja. * 1 2 3 4 5 Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju						
Saya mendukung perusahaan menyelenggarakan pelatihan lingkungan hidup untuk menumbuhkan kesadaran dan nilai-nilai ramah lingkungan pada karyawan. * 1 2 3 4 5 Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju						
Saya mendukung perusahaan untuk menyelenggarakan pelatihan lingkungan hidup untuk meningkatkan pengetahuan dan keterampilan karyawan dalam pengelolaan lingkungan. * 1 2 3 4 5 Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju						
Saya mendukung penerapan perilaku ramah lingkungan karyawan di tempat kerja sebagai salah satu komponen dalam penilaian kinerja organisasi. * 1 2 3 4 5 Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju						
Saya mendukung upaya perusahaan untuk memberikan penghargaan dan kompensasi kepada karyawan yang menunjukkan perilaku ramah lingkungan di tempat kerja. * 1 2 3 4 5 Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju						
Saya mendukung perilaku ramah lingkungan karyawan di tempat kerja menjadi salah satu pertimbangan dalam keputusan promosi jabatan di organisasi saya. * 1 2 3 4 5 Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju						

Lampiran 4. Pernyataan terkait Fleksibilitas Kerja Jarak Jauh

FLEKSIBILITAS KERJA JARAK JAUH

Fleksibilitas kerja jarak jauh merupakan pengaturan kerja yang memungkinkan karyawan melaksanakan tugas di luar lokasi kantor konvensional dengan dukungan teknologi digital yang memungkinkan konektivitas dengan perusahaan tetap terjaga. Hal ini diukur berdasarkan persepsi karyawan mengenai kebebasan dalam menentukan tempat dan waktu kerja, serta kemampuan menyelesaikan pekerjaan secara daring.

Petunjuk
Berikut adalah pilihan jawaban yang tersedia. Pilihlah sejauh mana Anda setuju pada setiap pernyataan dengan skala berikut:

1 = Sangat Tidak Setuju
2 = Tidak Setuju
3 = Netral
4 = Setuju
5 = Sangat Setuju

Saya menyukai sistem kerja jarak jauh sebagai bagian dari pekerjaan saya. *

1 2 3 4 5

Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju

Saya merasa lebih puas ketika menjalankan pekerjaan secara jarak jauh dibandingkan bekerja di tempat kerja secara langsung. *

1 2 3 4 5

Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju

Saya merasa bahwa sistem kerja jarak jauh dapat meningkatkan produktivitas kerja saya secara keseluruhan. *

1 2 3 4 5

Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju

Saya menikmati pengalaman kerja jarak jauh dalam menyelesaikan tugas dan tanggung jawab pekerjaan saya. *

1 2 3 4 5

Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju

Saya merasa bahwa pilihan kerja jarak jauh memberikan fleksibilitas yang lebih baik bagi karyawan dalam mengatur pekerjaan mereka. *

1 2 3 4 5

Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju

Lampiran 5. Peryataan terkait Keterikatan Karyawan

KETERIKATAN KARYAWAN	
Keterikatan karyawan merupakan kondisi psikologis positif yang mencerminkan energi, dedikasi, dan keterlibatan penuh individu terhadap pekerjaannya. Hal ini diukur berdasarkan persepsi karyawan mengenai semangat, rasa bangga, serta fokus mendalam dalam menjalankan tugas sehari-hari.	
Di tempat kerja, saya merasa penuh dengan energi. * 1 2 3 4 5 Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju	Pekerjaan saya menginspirasi saya. * 1 2 3 4 5 Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju
Pada pekerjaan saya, saya merasa kuat dan bertenaga. * 1 2 3 4 5 Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju	Saya bangga dengan pekerjaan yang saya lakukan. * 1 2 3 4 5 Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju
Saat saya bangun di pagi hari, saya merasa bersemangat dalam bekerja. * 1 2 3 4 5 Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju	Saya merasa bahagia ketika saya bekerja secara intens. * 1 2 3 4 5 Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju
Saya sangat antusias dengan pekerjaan saya. * 1 2 3 4 5 Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju	Saya merasa menyatu dalam pekerjaan saya. * 1 2 3 4 5 Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju
	Saya terbawa suasana ketika saya bekerja. * 1 2 3 4 5 Sangat Tidak Setuju ☐ ☐ ☐ ☐ ☐ Sangat Setuju

Lampiran 6. Hasil *Outer Loadings*

Outer Loadings

	FKJJ	GHRM	KK	TD
FKJJ1	0.898			
FKJJ2	0.878			
FKJJ3	0.850			
FKJJ4	0.883			
FKJJ5	0.900			
GHRM1		0.892		
GHRM2		0.824		
GHRM3		0.870		
GHRM4		0.848		
GHRM5		0.918		
GHRM6		0.887		
KK1			0.880	
KK2			0.846	
KK3			0.843	
KK4			0.860	
KK5			0.843	
KK6			0.894	
KK7			0.887	
KK8			0.822	
KK9			0.860	
TD1				0.868
TD2				0.893
TD3				0.831
TD4				0.737
TD5				0.729

Lampiran 7. Hasil Uji Validitas Diskriminan

Fornell-Larcker Criterion

	FKJJ	GHRM	KK	TD
FKJJ	0.882			
GHRM	0.751	0.874		
KK	0.647	0.632	0.860	
TD	0.484	0.658	0.627	0.814

Lampiran 8. Hasil Uji Validitas Reliabilitas

Construct Reliability and Validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
FKJJ	0.929	0.932	0.946	0.778
GHRM	0.938	0.939	0.951	0.763
KK	0.956	0.961	0.962	0.739
TD	0.874	0.903	0.907	0.663

Lampiran 9. Statistik Deskriptif

	Mean	Median	Min	Max	Standard Deviation	Excess Kurtosis	Skewness	Number of Observations Used
FKJJ1	3.777	4.000	1.000	5.000	1.040	-0.483	-0.578	130.000
FKJJ2	3.585	4.000	1.000	5.000	1.065	-0.541	-0.378	130.000
FKJJ3	3.485	4.000	1.000	5.000	1.039	-0.849	-0.166	130.000
FKJJ4	3.692	4.000	1.000	5.000	1.208	-1.008	-0.473	130.000
FKJJ5	3.731	4.000	1.000	5.000	1.115	-0.927	-0.427	130.000
GHRM1	3.623	4.000	1.000	5.000	1.032	-0.741	-0.250	130.000
GHRM2	3.608	4.000	1.000	5.000	0.924	-0.193	-0.321	130.000
GHRM3	3.848	4.000	1.000	5.000	0.991	-0.584	-0.245	130.000
GHRM4	3.785	4.000	1.000	5.000	1.015	-0.418	-0.537	130.000
GHRM5	3.669	4.000	1.000	5.000	1.091	-0.452	-0.424	130.000
GHRM6	3.577	4.000	1.000	5.000	1.084	-0.850	-0.270	130.000
KK1	3.731	4.000	1.000	5.000	0.975	-0.329	-0.442	130.000
KK2	3.438	4.000	1.000	5.000	1.023	-0.064	-0.224	130.000
KK3	3.515	4.000	1.000	5.000	1.090	-0.879	-0.202	130.000
KK4	3.608	4.000	1.000	5.000	1.004	-0.600	-0.300	130.000
KK5	3.538	4.000	1.000	5.000	0.954	-0.182	-0.299	130.000
KK6	3.677	4.000	1.000	5.000	1.069	-0.696	-0.317	130.000
KK7	3.623	4.000	1.000	5.000	0.922	-0.148	-0.388	130.000
KK8	3.715	4.000	1.000	5.000	0.978	-0.390	-0.398	130.000
KK9	3.462	4.000	1.000	5.000	1.018	-0.439	-0.317	130.000
TD1	3.977	4.000	1.000	5.000	0.972	0.302	-0.887	130.000
TD2	3.848	4.000	1.000	5.000	0.980	-0.131	-0.627	130.000
TD3	4.008	4.000	1.000	5.000	0.973	0.307	-0.878	130.000
TD4	3.515	4.000	1.000	5.000	1.061	-0.606	-0.255	130.000
TD5	3.585	4.000	1.000	5.000	1.122	-0.817	-0.313	130.000

Lampiran 10. Hasil Uji Koefisien Determinasi

R Square

	R Square	R Square Adjusted
FKJJ	0.564	0.561
GHRM	0.311	0.306
KK	0.399	0.394

Lampiran 11. Path Coefficients Direct Effect

Mean, STDEV, T-Values, P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
GHRM -> FKJJ	0.751	0.752	0.042	17.735	0.000
GHRM -> KK	0.632	0.632	0.063	10.045	0.000
TD -> GHRM	0.558	0.559	0.071	7.898	0.000

Lampiran 12. Path Coefficients Specific Indirect Effect

Specific Indirect Effects

	Specific Indirect Effects
TD -> GHRM -> FKJJ	0.419
TD -> GHRM -> KK	0.352

Lampiran 13. Jurnal Acuan Penelitian

Influence of digital transformation on green human resource management, flexibility in remote work and work engagement

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Abstract

Purpose – This study aims to explore how digital transformation (DT) influences green HRM (GHRM), remote work flexibility (RWF) and work engagement (WE). It also investigates how GHRM acts as a mediator between DT and RWF, as well as between DT and WE.

Design/methodology/approach – This study adopted a quantitative approach and analyzed the data using SmartPLS 4. A total of 471 samples were included in the data analysis at 2 distinct time intervals, with a gap of three months. The measurement and structural models were assessed and tested for the designed hypothesis using the partial least squares structural equation modeling method.

Findings – The results reveal that DT, as an independent variable, significantly affects GHRM, RWF and WE. Furthermore, GHRM positively affects remote work flexibility and work engagement. However, GHRM established a partial mediation role between DT and RWF. Further, the relationship between DT and WE is also mediated by the existence of GHRM.

Practical implications – Organizations undergoing GHRM necessitate crucial investments in DT. Managers ought to give priority to GHRM activities to gain a comprehensive understanding of the value of DT, rather than exclusively concentrating on the superficial return on investment resulting from the shift. Expanding the accessibility of remote work flexibility can offer opportunities to decrease the physical space occupied by corporate offices.

Originality/value – This study reveals how digital transformation fuels remote work flexibility and work engagement through GHRM, demonstrating their powerful synergy in creating sustainable, high-performing workplaces.

Keywords Digital transformation, GHRM, Work engagement, Remote work flexibility

Paper type Research article

1. Introduction

The rise of Industry 4.0 has made digital transformation (DT) a central force reshaping organizations by integrating cutting-edge technologies like the Internet of Things (IoT), big data analytics, artificial intelligence (AI), and robotics (Ahmed *et al.*, 2022; Alenizi *et al.*, 2023). This is not merely about adopting new digital tools, but a fundamental shift in organizational capabilities needed to navigate today's volatile, uncertain, complex, and ambiguous (VUCA) business environment (Ghosh *et al.*, 2022). In such a challenging context, organizations must not only adapt to rapid market changes but also strategically embed sustainable digital solutions that respond to increasing environmental concerns (Su *et al.*, 2016).

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These environmental imperatives have become integral to the evolving role of human resource management (HRM), which now extends beyond traditional people management to strategically integrating green practices with digital advancements to support organizational sustainability (Tabrizi *et al.*, 2023). Concurrently, the unprecedented shift toward remote work arrangements accelerated by the COVID-19 pandemic has become a permanent fixture of contemporary workplaces (Chatterjee *et al.*, 2022). Research demonstrates that flexible work arrangements significantly enhance work engagement through improved work-life balance and job satisfaction (Ahmed *et al.*, 2024), although challenges such as isolation and communication barriers can hinder optimal work engagement in remote settings (Adis *et al.*, 2023).

Work engagement, characterized by vigor, dedication, and absorption has emerged as critical organizational outcome strongly linked to individual performance and organizational success (Cărbănu and Iliescu, 2023). As organizations implement flexible work arrangements to enhance accessibility and inclusivity, understanding the factors influencing work engagement becomes essential for sustaining productivity in distributed work contexts. Simultaneously, Green Human Resource Management (GHRM) practices have gained prominence as organizations increasingly recognize the necessity of aligning operations with environmental sustainability objectives. GHRM plays a crucial role in cultivating organizational cultures that prioritize sustainable business practices, highlighting HRM's integral function in shaping organizational values and behaviors (Ogbeibu *et al.*, 2022). Despite increasing adoption of green technologies, organizations continue to face significant challenges in effectively implementing environmental sustainability initiatives with growing demands for transparency regarding environmental impacts and risk management (Jabbour and Soutos, 2006; Yamaguchi *et al.*, 2022). Recent studies emphasize HRM's critical role in supporting digital transformation through initiatives designed to enhance organizational agility and internal digital capabilities (Zhang and Chen, 2024).

Despite the evident intersections between digital transformation and Green HRM, there remains a notable gap in the literature examining their combined effects on remote work flexibility and work engagement. This research addresses this gap by investigating how digital transformation facilitates GHRM practices adoption and how these practices subsequently influence remote work flexibility and work engagement. Two research questions guide this investigation:

RQ1. How does digital transformation drive the adoption and effectiveness of Green HRM practices within organizations?

RQ2. What impact do Green HRM practices have on enhancing remote work flexibility and fostering work engagement in a digitally transforming environment?

This study makes significant theoretical contributions by providing a nuanced understanding of GHRM's mediating role in translating digital transformation initiatives into tangible organizational and employee outcomes. From a practical perspective, the research offers valuable insights for organizations seeking to synergistically integrate digital and green initiatives to create sustainable, engaging, and flexible work environments in the era of Industry 4.0. By exploring these dynamics, this study not only enhances theoretical understanding but also establishes a foundation for future research and organizational practice.

2. Theoretical framework and hypothesis development

Digital transformation is fundamentally reshaping organizational operations, including human resource management, and is increasingly intertwined with sustainability imperatives. From Resource-Based View (RBV), digital technologies and related capabilities can be understood as strategic resources that contribute to competitive advantage when they are valuable, rare, inimitable, and embedded in organizational processes (Barney, 1991; Newbert, 2008). This line of work shows that IT and digital capabilities enhance core competencies, agility, and performance, thereby providing a robust theoretical basis for viewing digital transformation as

a capability that can be mobilized for sustainability-oriented HRM rather than merely a technical upgrade (Helfat *et al.*, 2023; Makhoul *et al.*, 2021). Within this RBV framing, GHRM represents a complementary bundle of HR practices (e.g. green recruitment, training, and performance management) that embeds environmental objectives into people-management systems and shapes employees' pro-environmental attitudes and behaviors (Al-Swidi *et al.*, 2021). When aligned with digital capabilities, GHRM enables paperless HR processes, virtual learning, and low-carbon work arrangements, thus creating an integrated capability system that supports both environmental performance and organizational resilience in digitally intensive contexts.

Social Exchange Theory (SET) captures how these capabilities translate into employee outcomes. SET posits that employees reciprocate perceived organizational support and value congruence with higher engagement, commitment, and performance (Barick *et al.*, 2015). Providing employees with digital tools, flexible work arrangements, and environmentally responsible work designs signals that the organization cares about both their well-being and broader societal concerns, strengthening trust and reciprocity. GHRM practices grounded in environmental responsibility further reinforce this sense of alignment, motivating employees to remain engaged and to support the organization's sustainability objectives (Boehm *et al.*, 2024). Thus, the integrated RBV-SET framework suggests that digital transformation influences employee outcomes, such as work engagement and remote work flexibility, indirectly through GHRM, which functions simultaneously as a strategic capability and a relational exchange mechanism.

Conceptually, the integrated RBV-SET framework implies a directional sequence among the focal constructs. Digital transformation is theorized as an upstream capability that builds the technological and analytical infrastructure. Green HRM as a downstream HR capability that translates this infrastructure into sustainability-oriented HR practices, and remote work flexibility and work engagement as outcomes that emerge from how employees experience these digitally enabled and environmentally responsible HR arrangements. In this sequence, digital transformation is expected to precede and enable GHRM, which in turn transmits its influence to work outcomes, consistent with the mediating role formally tested in our model (Figure 1).

2.1 Digital transformation and green HRM

Digital transformation fundamentally reshapes organizational processes and decision-making by developing advanced digital capabilities, such as data analytics, real-time monitoring, and platform-based collaboration, that can be leveraged to support sustainability-oriented HR systems (Broekhuizen *et al.*, 2021; Ferraris *et al.*, 2019; Montero Guerra *et al.*, 2023). Rather than assuming an automatic causal link, digital transformation operates as an enabling

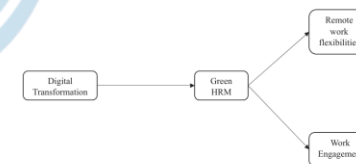


Figure 1. Conceptual model. Source: Authors' own

infrastructure that enhances the organization's capability and readiness to design and implement Green HRM practices, by providing the technological, informational, and coordination mechanisms required to embed environmental objectives into HR routines. Through the adoption of digital technologies, firms can collect, analyze, and report detailed environmental data, allowing them to monitor carbon footprints, track resource consumption, and evaluate the environmental impact of HR-related activities, thereby supporting evidence-based green recruitment, training, performance management, and reward systems (Dubey *et al.*, 2021; Khatoon *et al.*, 2022). In parallel, digital platforms, internal social networks, and gamified tools foster more interactive communication and collaboration around sustainability, which strengthens employees' awareness, participation, and engagement in environmental initiatives, a key behavioral foundation of Green HRM (Martinez-Caro *et al.*, 2020; Sidique and Pereira, 2023). Consequently, organizations that advance further in their digital transformation are not only more digitally sophisticated, but are also better positioned and more capable of adopting and institutionalizing Green HRM practices, as digital capabilities increase both the feasibility and effectiveness of integrating environmental objectives into HR policies and routines (Dubey *et al.*, 2021; Trujillo-Gallego *et al.*, 2022). Within our framework, this DT-GHRM link represents the first stage of the indirect pathways from digital transformation to remote work flexibility and work engagement, since GHRM functions as the immediate HR mechanism through which digitally enabled capabilities are translated into employees' work arrangements and experiences. Based on these theoretical arguments and empirical evidence, we propose:

H1. Digital transformation has a significant positive effect on Green HRM practices.

2.2 Green HRM and remote work flexibility

Organizations investing in GHRM typically implement advanced technologies and infrastructure that establish solid foundations for seamless remote work operations (Istiyasq *et al.*, 2024). This technological commitment aligns with environmental sustainability objectives while providing employees with efficient virtual collaboration capabilities (Itani *et al.*, 2022). The philosophical orientation of Green HRM, which prioritizes environmental responsibility, appeals to workforce segments that value both work-life balance and ecological footprint minimization (Maheshwari *et al.*, 2024).

GHRM's emphasis on remote work arrangements facilitates international collaboration, inclusivity, and innovation by expanding access to diverse talent pools (Batsal *et al.*, 2023). Organizations implementing green HRM practices establish reputations as socially responsible and environmentally conscious entities while simultaneously adapting to evolving environmental regulations (Kallmuenzer *et al.*, 2023). Green HRM practices effectively contribute to environmental conservation while cultivating flexible remote work cultures, creating mutually beneficial synergies between environmental consciousness and workplace flexibility (Tabrizi *et al.*, 2023). Furthermore, GHRM practices emphasize outcome-based performance evaluation rather than process monitoring, thereby facilitating the autonomous and location-independent work essential for effective remote arrangements. Based on these theoretical arguments and empirical evidence, we propose:

H2. Green HRM has a significant positive effect on remote work flexibility.

2.3 Green HRM and work engagement

Green HRM represents an innovative organizational approach that integrates environmental sustainability into human resource operations (Singh *et al.*, 2020). This strategy encompasses the implementation of eco-friendly workplace policies and sustainable training programs that promote healthier work environments while aligning with growing employee preferences for environmentally conscious workplaces (Anwar *et al.*, 2020). These initiatives enhance employee well-being and job satisfaction, directly influencing engagement levels (Hameed *et al.*, 2020).

As environmental consciousness increases, the alignment between personal values and organizational sustainability initiatives becomes increasingly significant within firms, potentially driving enhanced work engagement (Dzhengiz and Niesten, 2020). This alignment fosters symbiotic relationships wherein both organizations and employees benefit from shared sustainability commitments, highlighting GHRM's notable influence on overall work engagement (Hua *et al.*, 2020). Furthermore, GHRM creates organizational contexts in which environmentally conscious employees perceive stronger alignment between personal and organizational values, enhancing psychological meaningfulness and subsequent engagement. Based on these theoretical arguments and empirical evidence, we propose:

H3. Green HRM has a significant positive effect on work engagement.

2.4 Green HRM, digital transformation and remote work flexibility

Contemporary technological developments play pivotal roles in stimulating resource efficiency and mitigating environmental impacts. GHRM emerges as a crucial strategic practice focused on environmental sustainability (Suleman *et al.*, 2024), echoing the ecological advantages associated with digital transformation (Hameed *et al.*, 2020). Green HRM's commitment to employee well-being and engagement harmonizes with the adoption of digital tools facilitating remote work (Walkowiak, 2024). Enhanced employee well-being not only strengthens organizational culture but also supports technological utilization for remote work, resulting in more efficient and motivated workforces (Lagunan *et al.*, 2021).

DT fundamentally enables remote work flexibility by providing the technological infrastructure and digital HRM practices necessary for employees to work remotely effectively. Empirical studies reveal that organizations with advanced digital capabilities were able to implement remote working arrangements more successfully during COVID-19, demonstrating that remote work flexibility is a direct manifestation of DT rather than a separate policy choice (Peer *et al.*, 2024; Wuersch *et al.*, 2023). Furthermore, digital HRM research confirms that digital tools and flexible work policies enhance employees' autonomy and work-life balance, making remote work a central component through which employees experience the effects of DT (Battisti *et al.*, 2022; Sini *et al.*, 2025).

The convergence of Green HRM with digital transformation principles amplifies cost-saving initiatives. Productivity efficiency and operational cost reduction are inherently driven by digital transformation, with remote work flexibility representing an approach to cost reduction through digital inclusiveness (Oduru *et al.*, 2023). Green HRM, with its focus on resource optimization, ensures effective communication and distribution of resource-efficient strategies (Sahu *et al.*, 2025). The environmentally conscious employer brand cultivated through Green HRM enhances talent acquisition capabilities (Shah and Soomro, 2023). Successful integration of digital transformation and remote work arrangements depends on Green HRM's capacity for cultural alignment and change management, fostering organizational cultures that embrace innovation and adapt to evolving technologies and work practices (Haldarai *et al.*, 2022). Green HRM thus mediates the relationship between digital transformation and remote work flexibility by translating technological capabilities into sustainable work arrangements aligned with environmental objectives. Based on these theoretical arguments and empirical evidence, we propose:

H4. Green HRM mediates the relationship between digital transformation and remote work flexibility.

2.5 Green HRM, digital transformation and work engagement

As a strategic approach, GHRM empowers employees and enhances their sense of responsibility, leading to increased engagement levels (Luu, 2022). This purpose-driven responsibility, catalyzed by GHRM and facilitated by digital transformation, creates loyal and

committed workforces that actively contribute to organizational sustainability objectives (Zhang *et al.*, 2023). Digital transformation has fundamentally reconfigured workplace environments, enhanced efficiency, adaptability, and productivity while enabling employees to thrive in virtual environments and collaborate effectively (Yang *et al.*, 2025). Green HRM practices, enhanced through digital transformation's provision of accessibility, flexibility, and collaborative capabilities, accustom engaged and motivated workforces (Ly and Ly, 2024). GHRM provides pathways for digital transformation to positively influence work engagement, fostering sustainable, committed, and productive organizational environments (Gupta and Jangra, 2024; Nguyen *et al.*, 2025). Digital transformation establishes the technological infrastructure and capabilities that enable implementation of comprehensive Green HRM systems. These systems subsequently enhance employee work engagement through value alignment, psychological need satisfaction, and organizational identification. Digital transformation signals organizational innovation while Green HRM signals environmental responsibility, the combination creating compelling organizational identities that enhance employees' psychological identification and subsequent work engagement. Based on these theoretical arguments and empirical evidence, we propose:

H5. Green HRM mediates the relationship between digital transformation and work engagement.

3. Methodology

3.1 Sampling design

This study used quantitative methods to prioritize and analyze the proposed hypotheses. The intentional selection of a non-probability sampling technique, namely the expedient method, was made due to its rapidity and cost-effectiveness, which allowed for the gathering of data from a large sample size. The research focused on the dynamic domain of Indian IT companies with a special emphasis on key technological hotspots such as Delhi NCR, Bangalore, Hyderabad, and Bhubaneswar. The research team diligently chose participants from a diverse pool of individuals considered to be the most knowledgeable regarding the performance of their respective organizations (Qalati *et al.*, 2021). This included executives, project managers, team leaders, and software engineers. The decision to use Google Forms for the online survey was a deliberate choice, based on the findings of (Lefever *et al.*, 2007), who emphasized the exceptional success of online surveys in terms of their speed, simplicity, and cost-efficiency for collecting data. A carefully designed and well-distributed questionnaire played a crucial role in collecting data. Data were obtained at two distinct time intervals (T1 and T2) separated by a 3-month interval. This aligns with the recommendations proposed by Podsakoff *et al.* (2003) to mitigate common method bias (CMB) and minimize the influence of priming effects in cross-sectional research. In this two-phase study, we initially reached out to the human resource managers of the IT companies and communicated the aim of the data collection for the purpose of the study. At time point T1, the participants provided fundamental demographic information about themselves and also evaluated the predictive variable, DT, and the mediating variable, GHRM, using a five-point Likert scale. We have received a total of 710 complete questionnaires at Time Point 1. The survey instrument was programmed to obtain the response of the same participant for the outcome variable after a period of 3 months. We reached out to the same group of participants and gathered their feedback on their remote work flexibility and their overall engagement in the workplace. We obtained a total of 547 replies in T2. After eliminating the incomplete and unresponsive replies, the final sample size was 471.

Although the study design is non-experimental, the two-wave data collection strategy strengthens the temporal ordering implied in our mediation model. Digital transformation and Green HRM were measured at T1, while remote work flexibility and work engagement were measured at T2, three months later, which aligns with recommendations to temporally separate predictors and outcomes to reduce common method bias and mitigate concerns about reverse

causality (Podsakoff *et al.*, 2003). This design does not allow definitive causal inference, but it increases the plausibility that digital transformation and GHRM precede and influence subsequent perceptions of remote work flexibility and work engagement, in line with the theoretical mechanisms specified.

A closer inspection of Table 1 illuminates the demographic landscape of the respondents, with 57.96% being male and 42.04% female participants. Noteworthy is the fact that a majority of respondents (35.88%) reported working experience spanning 0-5 years, underscoring the inclusion of perspectives from both seasoned professionals and emerging talents. Delving into the professional roles, a substantial 62.21% of respondents held the designation of software engineers, accentuating the study's reach into the heart of technological expertise. This meticulously curated dataset, refined through stringent screening, forms the bedrock for unraveling the nuanced dynamics underpinning the research objectives.

3.2 Measures

This research study included 27 items that were extracted from the existing literature study. The measuring scales were used to record the respondent's opinions. The scale items were measured on a 5-point Likert scale which represents 1 = Strongly disagree and 5 = Strongly agree)

Digital Transformation: Employing a 5-item scale crafted by Ifenthaler and Egloffstein in 2020, our assessment of the DT construct revolves around probing the belief that "Digitalization offers great potential for my own professional development" The compelling Cronbach's alpha value of 0.804 attests to the robustness of this measure.

Green HRM: To gauge Green Human Resource Management (GHRM), we have harnessed a 6-item scale derived from the work of Hameed *et al.* in 2020. An exemplar item from this scale is "My organization provides employees with green training to promote green values." The commendable Cronbach's alpha of 0.887 underscores the reliability of our assessment.

Work engagement: Our exploration of Work engagement draws from a 9-item scale adapted from Schaufeli *et al.* (2006). This multifaceted examination encompasses vigor, absorption and dedication. This comprehensive approach allows us to delve deeply into the diverse dimensions of WE. Sample items are: "At my work, I feel bursting with energy", "I am proud of the work that I do", "My job inspires me".

Remote Work Flexibility: Evaluating the dimension of Remote Work Flexibility involves utilizing a 5-item scale originating from the research of Chantuejo *et al.* in 2022. A representative item reflecting this construct is "I think remote working keeps me engaged most

Table 1. Respondent's demographic details

Particulars	Category	No of respondents	Percentage (%)
Gender	Male	273	57.96%
	Female	198	42.04%
Experience	0-5 Years	169	35.88%
	05-10 Years	153	32.48%
	10-15 Years	102	21.66%
	More than 15 Years	47	9.98%
	HR Executive	41	8.70%
Designation	Project Manager	53	11.25%
	Team Leader	84	17.83%
	Software engineer	293	62.21%
Total		471	100%

Source(s): Authors' own

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of the time". The impressive Cronbach's alpha of 0.896 emphasizes the reliability and validity of our measurement.

4. Results

The current research employs a survey-based approach, with the findings analyzed using SMART-PLS 4. Initially, the study validates the measurement of both the outer and inner models. It was confirmed that the measurement items were normally distributed as kurtosis and skewness were in the threshold limit of ± 2 (Hair *et al.*, 2022, p. 66). Next, a two-step process was applied to test the research model. First, confirmatory factor analysis (CFA) for the measurement model was performed to examine the different forms of validity and reliability. Afterward, the structural path and different hypotheses were assessed using partial structural equation modeling (PLS-SEM). To assess the potential common method bias, Harman's single-factor method is employed, wherein all items are loaded into a single factor. Our findings indicate that only 32% of the variance is explained, well below the maximum threshold of 50%, confirming the absence of common method bias. In addition, the study incorporates an extra measure to detect common technique bias by calculating the Variance Inflation Factor (VIF). The VIF values observed, all below 3, show the absence of common technique bias in the sample, as proposed by Kock (2015). Our thorough technique enhances the reliability of confirming that common method bias is not a serious problem in our investigation.

4.1 Measurement model assessment

In the measurement model the latent constructs which are measured through scale items were assessed and evaluated through composite reliability, convergent and discriminant validity before examining the relationship of constructs (Hair *et al.*, 2021). The important constructs for this study are DT, GHRM, RWF and WE. The constructs like DT, GHRM, RWF, vigor, absorption and dedication were investigated through a first-order reflective approach. However, the construct WE is measured through a second-order reflective approach where the sub-constructs considered are vigor, absorption and dedication. The internal reliability was assessed through Cronbach's alpha and Henssler's rho value (Table 2). The threshold limit for these two indices was 0.70 (Hair *et al.*, 2022). In our analysis, Cronbach's alpha value and value of rho achieved the threshold limit. Hence, it is confirmed that the collected samples are reliable for measuring all the constructs presented in the study. Similarly, the value of rho, A also reached the threshold limit, i.e. 0.70. Hence, the composite reliability of the constructs was confirmed. Further the convergent validity for all the constructs was assessed through Average Variance Explained (AVE) value. The threshold limit of AVE for achieving Convergent Validity is 0.5 and as per the analysis this value is achieved by all the constructs. Thus, the convergent validity is also confirmed in the study.

Again, the Discriminant Validity is assessed using the Fornell and Larcker (1981) approach. The assessment of the measurement model has been justified in Table 1. As per the guidelines, the square root of AVE should be greater than the inter-item correlation among the variables. The square root of AVE is written in bold letters and placed diagonally of Table 3. Hence, it is clear that the present study is following the prescribed guidelines for discriminant validity. So, it is confirmed that all the constructs considered in the study are different from each other.

4.2 Structural model assessment

The analysis of the structural model followed the assessment of the measurement model. Hypotheses were tested using the 5000-bootstrap resampling method to determine the significance level (Richter *et al.*, 2016). The coefficient of determination, also known as R-square, quantifies the predictive accuracy of the structural model and represents the

Table 2. Measurement model concerns

Latent Variables	Scale items	Factor loadings	Cronbach's alpha	Composite reliability (rho _c)	Average variance extracted (AVE)
Digital transformation	DT1	0.764	0.804	0.803	0.562
	DT2	0.815			
	DT3	0.732			
	DT4	0.745			
	DT5	0.685			
Green human resource management	GHRM1	0.886	0.887	0.898	0.642
	GHRM2	0.859			
	GHRM3	0.768			
	GHRM4	0.758			
	GHRM5	0.7			
	GHRM6	0.78			
Remote work flexibility	RWF1	0.922	0.896	0.907	0.715
	RWF2	0.913			
	RWF3	0.858			
	RWF4	0.852			
	RWF5	0.65			
Vigor	V11	0.864	0.833	0.835	0.75
	V12	0.881			
	V13	0.853			
Dedication	DE1	0.86	0.788	0.799	0.703
	DE2	0.775			
	DE3	0.877			
Absorption	AB1	0.679	0.701	0.712	0.609
	AB2	0.781			
	AB3	0.869			
Work engagement	Vigor	0.891	0.8	0.807	0.716
	Dedication	0.803			
Source(s): Authors' own		Absorption	0.841		

Table 3. Discriminant validity (Fornell and Larcker approach)

	Absorption	DT	Dedication	GHRM	RWF	Vigor
Absorption	0.781					
DT	0.59	0.75				
Dedication	0.449	0.586	0.839			
GHRM	0.397	0.323	0.479	0.801		
RWF	0.563	0.487	0.283	0.395	0.845	
Vigor	0.675	0.496	0.591	0.521	0.427	0.866

Source(s): Authors' own

collective impact of all exogenous variables on the endogenous variable. In other words, it measures the extent to which the exogenous constructs explain the variance in the endogenous constructs that are connected to them (Hair *et al.*, 2022). The study model accounts for 30% of the variation in remote work flexibility, indicating that changes in digital transformation and green HRM can significantly impact employees' ability to work flexibly. Additionally, the model explains 56.4% of the variation in WE, suggesting that these HR practices have strong potential to enhance employee motivation and engagement, as shown in Figure 2.

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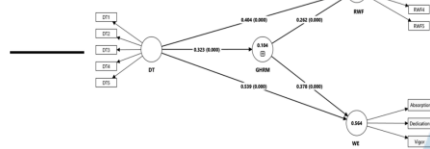


Figure 2. Structural model. Source: Authors' own

The standardized root means square residual (SRMR) value of 0.052 is below the threshold of 0.10, which indicates that the PLS structural model fits well overall. This finding supports the robustness of these relationships, making them valuable for managers and organizations seeking to improve flexibility and engagement (Hair *et al.*, 2022) (see Table 4).

The findings of the study investigated the effect of IVs on DVs, and the results are represented in the hypotheses Table 5 and Figure 2. The H1 talks about the effect of DT on GHRM, which is supported by the analysis with $\beta = 0.539$, $t = 6.243$, $p < 0.001$. This indicates that enhancements in digital capabilities can substantially strengthen environmentally sustainable HR practices, guiding organizational efforts toward greener management. H2 measures the effect of GHRM on RWF. Here $\beta = 0.085$ with $t = 4.33$, $p < 0.001$. So, the H2 is

Table 4. Mediation analysis

Relationship	Direct effect	Specific indirect effect	Total effect	Decision
DT → GHRM →	0.404 ($t = 6.295$, $p < 0.001$)	0.085 ($t = 3.758$, $p < 0.001$)	0.489	Partial Mediation
DT → GHRM → WE	0.539 ($t = 12.35$, $p < 0.001$)	0.122 ($t = 4.966$, $p < 0.001$)	0.661	Partial Mediation

Source(s): Authors' own

Table 5. Hypotheses table

Hypotheses	Relationship	Standardized beta value	t-value	p value	Decision
H1	DT → GHRM	0.539	6.243	0.001	Supported
H2	GHRM → RWF	0.085	4.33	0.001	Supported
H3	GHRM → WE	0.378	8.25	0.001	Supported
H4	DT → GHRM → RWF	0.085	3.816	0.001	Supported
H5	DT → GHRM → WE	0.106	4.676	0.001	Supported

Source(s): Authors' own

also supported with the analysis. It suggests that green HR initiatives meaningfully facilitate flexible remote work arrangements, supporting workforce adaptability and sustainability goals. The H3 wants to measure the significant impact of GHRM on WE. The result shows that the H3 is supported with the $\beta = 0.378$, $t = 8.25$, $p < 0.001$. Therefore, the finding shows that the H3 is also supported and accepted in this study. This means organizations that invest in robust green HRM practices not only support sustainability but can expect notable improvements in workforce engagement, leading to enhanced performance, innovation, and reduced turnover risk. In essence, GHRM creates a motivating climate that incorporates environmental values into employee identity and everyday work, producing a substantial and actionable boost in engagement levels.

Further, the H4 and H5 are all about the mediation role of GHRM. The H4 measures the mediation effects of GHRM on the relationship between DT and RWF. The specific indirect effect for this relationship is 0.085, which is significant with $t = 3.816$, $p < 0.001$ and the direct effects of DT on RWF is 0.404, $t = 6.295$, $p < 0.001$. Here, the direct effects as well as the indirect effects of DT on RWF through GHRM are significant. Again, if the direct and indirect effects both are significant in a particular relationship, then this is treated as a partial mediational relationship (Zhao *et al.*, 2010). Likewise, for the relationship between DT and WE, the direct effect is significant with $\beta = 0.539$, $t = 12.35$, $p < 0.001$ and the indirect relationship through GHRM is also significant with $\beta = 0.122$, $t = 4.966$, $p < 0.001$. Thus, there exists a partial mediation role of GHRM for the relationship between DT and WE. The hypothesis H5 is also supported with the analysis. The partial mediational role of GHRM between DT and RWF, as well as between DT and WE, illustrates that green HR practices are key mechanisms through which digital transformation translates into enhanced remote flexibility and work engagement (Table 4). These findings collectively imply that investments in digital transformation, coupled with focused green HRM practices, can lead to tangible improvements in remote work capabilities and workforce engagement, thereby contributing to organizational sustainability and resilience.

5. Discussions and implications

The pervasive integration of digital transformation within organizational operations has emerged as an indisputable imperative for maintaining competitiveness in contemporary business environments (Khan and Aftab, 2024). The recent pandemic has further underscored the critical importance of DT while simultaneously highlighting two significant challenges in its implementation. First, organizations frequently lack digitally literate talent capable of navigating and implementing the requisite changes. Second, equipping entire organizations with efficient digital infrastructure remains a formidable challenge (Feliciano-Cestero *et al.*, 2023). Despite these obstacles, evolving market dynamics have compelled organizations to adopt practices that facilitate transformation and inspire employees to adapt to changing circumstances.

In this era characterized by technological disruption and heightened corporate responsibility toward sustainable development, organizations are progressively adopting transformative practices that redefine business processes through digital technology. Our empirical findings reveal a significant relationship between digital transformation and Green HRM, indicating that organizations seeking effective implementation of GHRM must concurrently strengthen their digital transformation initiatives. This finding aligns with and extends previous research by Trujillo *et al.* (2022), who identified digital infrastructure as foundational to HR strategy execution. Indeed, digital transformation serves as the essential structural support for successful HR strategy implementation (Chatterjee *et al.*, 2022; Ima *et al.*, 2023) representing a powerful disruptive force reshaping the contemporary corporate landscape (Ghosh *et al.*, 2022).

Our results further demonstrate that Green HRM, encompassing sustainable and environmentally conscious HR practices, successfully promotes corporate responsibility and mission-driven engagement among employees, consistent with findings from Mousa and

Othman (2020) and Sabokro *et al.* (2021). This strategic approach aligns with the evolving nature of work and organizational structures, achieving work-life balance through remote work flexibility enabled by technological advancements. The successful implementation of GHRM significantly enhances work engagement and facilitates autonomy through flexible remote work arrangements. While previous research has identified work engagement as increasingly challenging in contemporary work environments, our findings suggest that remote work opportunities provide crucial avenues for employee upskilling and reskilling to mitigate these challenges.

The significant effect of GHRM on both remote work flexibility and work engagement revealed in our analysis highlights how remote work arrangements can serve as strategic mechanisms contributing to improved technology adoption, innovation encouragement, increased productivity, engagement, and well-being (Moon *et al.*, 2016; Shamsi *et al.*, 2021; Weideman and Holmeyer, 2020). Moreover, our findings regarding the impact of remote work flexibility on work engagement extend the growing literature on the connection between flexible work arrangements and work engagement in digitally transformed environments (Morton and Fisson, 2021; Rani and Furrer, 2021).

Amidst ongoing organizational and environmental fluctuations, it becomes imperative for firms to comprehensively understand and effectively manage these interconnected processes. This understanding provides the foundation for strategic decisions that foster workforces characterized by heightened engagement, enhanced resilience, and increased flexibility within the evolving landscape of digital transformation and environmental sustainability.

5.1 Theoretical implications

This study makes several significant theoretical contributions by effectively employing the RBV and SET to investigate the interrelationships between digital transformation, Green HRM, remote work flexibility, and work engagement. By examining how digital transformation enables and enhances GHRM implementation, we extend understanding of how technological capabilities can be strategically integrated with human resource management to achieve alignment with broader organizational sustainability objectives.

Our findings demonstrate that digital transformation plays a critical role in facilitating the implementation of Green HRM practices, revealing how digital capabilities enable environmentally conscious HR management that aligns seamlessly with organizational sustainability strategies. Furthermore, our results indicate that GHRM functions as a catalyst for work engagement while simultaneously facilitating flexible work arrangements that promote improved work-life balance. These findings are consistent with established theoretical frameworks including Strategic Human Resource Management (SHRM) and the RBV, contributing to the literature on organizational efficiency in resource utilization. By demonstrating the relationships between digital transformation, GHRM, and work engagement, our study highlights how competitive advantages can be derived from implementing digitally-enabled, environmentally conscious HR practices. This nuanced understanding contributes valuable theoretical insights for future research and practical applications in the dynamic fields of human resources management and organizational strategy.

The mediating role of GHRM in translating digital transformation initiatives into enhanced remote work flexibility and work engagement represents a novel theoretical contribution. By establishing these mediation effects, our research illuminates the complex causal pathways through which technological investments influence key organizational outcomes. These understanding advances theoretical models of how digital and green organizational initiatives interact to influence employee attitudes and behaviors in contemporary work environments.

5.2 Practical implications

This research provides substantial practical insights for organizations investing in digital transformation and implementing Green HRM practices. First, our findings underscore that

firms pursuing GHRM implementation must make corresponding investments in digital transformation. Rather than evaluating digital initiatives solely based on immediate returns on investment, managers should recognize digital transformation as an essential foundation for effective GHRM implementation. By integrating environmentally sustainable practices within digital transformation frameworks, organizations can enhance remote work flexibility, reduce carbon emissions, and fulfill corporate social responsibility obligations simultaneously. For HR practitioners specifically, our findings emphasize the necessity of aligning HR strategies with ongoing digital transformation efforts, allocating sufficient resources to ensure organizational readiness, and fostering digital inclusiveness across diverse employee populations. Continuous skill enhancement emerges as an essential component of effective GHRM implementation, with adaptability representing a quantifiable outcome of successful digital transformation and sustainable HRM practices.

Our research promotes a comprehensive approach to GHRM that encompasses both remote work flexibility and work engagement initiatives. Organizations must strategically reconfigure work responsibilities and activities to effectively address environmental objectives while maintaining work engagement. Management should appropriately compensate and provide additional remuneration to employees who demonstrate commitment to developing environmentally friendly capabilities and behaviors, creating incentive structures that reinforce sustainability objectives. The deployment of diverse technologies and tools emerges as a critical strategy for optimizing HR processes, leading to enhanced productivity, streamlined operations, and increased precision in human resource management. Our findings suggest that organizations should extend their focus beyond environmental considerations alone to incorporate deliberate strategies for active employee involvement in sustainability initiatives. The demonstrated relationship between GHRM and remote work flexibility offers practical guidance for organizations seeking to reduce their environmental footprint while maintaining productivity. Increased implementation of remote work arrangements provides opportunities to reduce organizational physical footprints, thereby decreasing energy consumption for facility operations and reducing direct emissions. The positive relationship between remote work flexibility and work engagement further indicates that environmentally beneficial work arrangements can simultaneously enhance employee psychological investment in work roles.

6. Limitations and future research directions

This study has several limitations that provide useful directions for future research. First, the sample comprises IT professionals from major Indian technology hubs, which may limit the generalizability of the findings to other sectors, organizational sizes, and national or cultural contexts. Future studies should replicate and extend this model in different industries and countries to explore contextual contingencies and enhance external validity. Second, although a two-wave design was employed, with digital transformation and GHRM measured at T1 and remote work flexibility and work engagement at T2, the data remain correlational and non-experimental. Temporal separation strengthens the plausibility of the proposed sequence and reduces the risk of common method bias and reverse causality, yet unobserved organizational factors, such as leadership style, culture, or strategy, may still influence all focal constructs. Future research using longitudinal panels, experimental, or quasi-experimental designs would help to more rigorously test causal mechanisms and rule out alternative explanations.

Third, all constructs were assessed through self-reported measures, which may be subject to perceptual bias despite the procedural and statistical remedies applied. Future studies should incorporate multi-source data, such as objective indicators of digital infrastructure or environmental performance and supervisor-rated engagement or performance, to triangulate the relationships identified and provide a more comprehensive understanding of how digital transformation and GHRM jointly shape employee and organizational outcomes.

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