
THE TRANSPARENCY PARADOX IN DIGITAL EMPLOYEE

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ABSTRACT

This study examines the paradoxical finding that transparency in digital HR systems may be more important than processing efficiency for employee satisfaction, challenging the dominant efficiency paradigm in digital transformation literature. Drawing on organizational justice theory and administrative burden theory, we investigate how transparency features in a frugal digital innovation enhance employee satisfaction through informational justice and perceived organizational support in a bureaucracy-heavy university context. We employed a mixed-methods research design to evaluate a Google Workspace-based international travel approval system at a major Indonesian research university. Quantitative data were collected from 100 faculty members and administrators, and qualitative data were gathered through open-ended responses. Results reveal a striking transparency paradox: despite moderate processing efficiency, the system achieved high overall satisfaction (87%). Transparency emerged as the highest-rated dimension ($M=4.084$), while process efficiency remains a moderately important factor ($r=0.524$, $p<0.01$), correlation analysis demonstrated that transparency emerges as the dominant driver of satisfaction ($r=0.687$, $p<0.01$), with this difference being statistically significant. Qualitative findings revealed that transparency acts as a psychological buffer, transforming anxiogenic uncertainty into manageable wait time, thereby reducing psychological costs of administrative burden. For HR practitioners and organizational leaders, particularly in resource-constrained settings, this research provides evidence-based guidance to prioritize transparency features over expensive automation in digital transformation initiatives.

Keywords: Digital employee experience, informational justice, perceived organizational support, transparency, administrative burden, frugal innovation

INTRODUCTION

Universities are under pressure to perform, but their internal bureaucracy often hinders their own talent. Faculty members, the core intellectual assets of these institutions, are increasingly burdened by administrative processes that consume valuable time and generate significant psychological stress. This administrative friction, far from being a

mere inconvenience, has become a critical crisis contributing to faculty burnout, reduced research productivity, and diminished institutional competitiveness. Recent studies document alarming rates of burnout among university faculty, with administrative burden identified as a primary contributor to emotional exhaustion, cynicism, and intention to leave academia (Cadena-Povea et al.,



2025). International travel approval processes exemplify this challenge with particular acuity. These complex, multi-stage processes, often shrouded in opacity, force faculty to navigate a labyrinth of sequential approvals with little to no information about the status of their requests. The resulting uncertainty creates a state of chronic anxiety that extends far beyond the inconvenience of waiting: will funding be approved in time to book flights? Has the request been lost in a bureaucratic black hole? Who is responsible for the current delay? Should I follow up, or will that be perceived as pushy? This is not just a process problem; it is a human problem, where the very systems designed to support faculty instead become a primary source of frustration, stress, and distrust.

Conventional wisdom in digital transformation, heavily influenced by New Public Management (NPM) principles, suggests that the solution to such administrative burden lies in process automation and efficiency enhancement. From this perspective, the primary goal of digital HR systems should be to minimize processing time, reduce the number of approval steps, and accelerate decision-making through algorithmic optimization and workflow automation. The underlying assumption is straightforward and seemingly self-evident: faster processes generate higher employee satisfaction by reducing the time employees must wait for approvals and allowing them to proceed more quickly with their work. This efficiency-centric logic has driven billions of dollars in investments in enterprise resource planning (ERP) systems, robotic process automation (RPA), and artificial intelligence-

powered workflow engines, all promising to deliver “faster, cheaper, better” HR services.

However, this efficiency-centric logic may fundamentally misunderstand what employees actually need from digital HR systems. When employees submit requests into digital systems, their primary concern may not be how quickly the request is processed, but rather whether they have adequate information to understand what is happening, predict when decisions will be made, and maintain a sense of control over the process. The literature has largely focused on sophisticated, high-cost enterprise systems, often neglecting the potential of low-cost, frugal interventions to address these fundamental psychological needs. Moreover, existing research has predominantly examined efficiency as the primary determinant of user satisfaction, with transparency treated as a secondary or ancillary concern. This theoretical bias reflects the broader dominance of NPM thinking in public sector digital transformation, where “value” is equated with “speed” and “cost reduction.”

This study challenges this efficiency paradigm by investigating a frugal digital innovation implemented at Universitas Indonesia, one of Indonesia’s premier research universities. Facing significant administrative burden in international travel approval processes but lacking resources for expensive enterprise HR systems, the university developed a Google Workspace-based solution that strategically prioritized transparency features (real-time status tracking, timeline visibility, approval chain information, automated notifications)

over automation features (AI-powered decision-making, advanced workflow engines, integration with enterprise systems). This strategic choice reflected a frugal innovation approach: focusing limited resources on core functionalities that were hypothesized to deliver maximum value to users based on deep understanding of their psychological needs rather than assumptions about what they should value.

The system's implementation generated an unexpected and theoretically significant finding that we term the "transparency paradox": despite achieving only moderate improvements in processing efficiency (with average approval times remaining at 14 days), the system generated remarkably high employee satisfaction, with 87% of users reporting satisfaction or high satisfaction. Preliminary analysis suggested that this high satisfaction was driven primarily by the system's transparency features rather than its efficiency gains. Users particularly valued the ability to track request status in real time, see who was responsible for review at each stage, understand expected timelines, and receive automated notifications of progress. These transparency features appeared to reduce the psychological costs of administrative burden by providing certainty, predictability, and a sense of control, even when actual processing times remained substantial. In other words, transparency transformed an anxiogenic uncertainty into a manageable wait time, and this psychological transformation proved more valuable to users than speed itself.

This finding challenges fundamental assumptions in the digital HRM literature and raises important

theoretical and practical questions. Theoretically, it suggests that employee satisfaction with digital HR systems may be driven more by psychological mechanisms related to fairness, trust, and organizational support than by instrumental outcomes related to speed and efficiency. Practically, it suggests that organizations with limited resources may achieve high employee satisfaction through strategic prioritization of transparency features rather than expensive comprehensive automation. This has profound implications for how we conceptualize "good" digital transformation in HR and what features organizations should prioritize when resources are constrained.

To investigate this transparency paradox, we draw on three interconnected theoretical frameworks that together provide a comprehensive explanation for why transparency may matter more than efficiency in certain contexts. First, organizational justice theory, particularly the construct of informational justice, provides a lens for understanding why transparency matters for employee satisfaction. Informational justice refers to the adequacy of explanations and information provided about organizational processes and decisions (Colquitt, 2001). When digital systems provide clear, timely, and specific information about process status and decision-making, they fulfill employees' informational justice needs, which research has shown to be distinct from and sometimes more important than distributive justice (fairness of outcomes) or procedural justice (fairness of processes). We propose that transparency in digital HR systems

serves as a functional equivalent of interpersonal communication in traditional organizational contexts, manifesting informational justice and signaling that the organization respects employees' need for information and values their time.

Second, organizational support theory and the construct of perceived organizational support (POS) provide a framework for understanding the downstream consequences of informational justice (Rhoades & Eisenberger, 2002). According to organizational support theory, employees develop global beliefs about the extent to which the organization values their contributions and cares about their well-being. These beliefs are shaped by organizational actions that employees interpret as signals of organizational intentions and values. We propose that transparency in digital systems serves as such a signal: when organizations provide transparent information about administrative processes, employees interpret this as evidence that the organization respects them, trusts them with information, and cares about reducing their uncertainty and anxiety. This interpretation enhances perceived organizational support, which in turn predicts satisfaction through social exchange mechanisms and reciprocity norms.

Third, administrative burden theory provides a framework for understanding why transparency may matter more than efficiency in certain contexts (Woelert, 2023). Recent scholarship on administrative burden has distinguished between compliance costs (time and effort required to complete administrative tasks) and psychological costs (frustration, anxiety,

uncertainty, and loss of control experienced during administrative processes). While efficiency improvements primarily address compliance costs, transparency improvements primarily address psychological costs. If psychological costs are more consequential than compliance costs for employee well-being and satisfaction, as administrative burden theory suggests and our data will demonstrate, then transparency should have a stronger effect on satisfaction than efficiency.

Integrating these theoretical frameworks, we propose a model in which transparency in digital HR systems enhances employee satisfaction through two sequential mediating mechanisms: informational justice and perceived organizational support. Specifically, we argue that transparency features (status tracking, timeline visibility, approval chain information) enhance employees' perceptions that they are receiving adequate, timely, and truthful information about processes (informational justice), which in turn enhances their beliefs that the organization values and supports them (perceived organizational support), which ultimately predicts satisfaction through reciprocity norms. Critically, we propose that transparency acts as a psychological buffer that transforms uncertainty (a highly aversive psychological state) into predictable wait time (a manageable, if unpleasant, experience). This transformation is the core mechanism underlying the transparency paradox.

We further propose that this transparency effect is particularly strong in contexts characterized by high administrative burden, complex, multi-

stakeholder processes, and bureaucracy-heavy organizational cultures. In such contexts, employees experience substantial uncertainty and psychological costs, making transparency particularly valuable. Conversely, in contexts with low administrative burden and simple processes, uncertainty is already minimal, so transparency provides less incremental value. This contextual moderating effect helps explain why the transparency paradox may be more pronounced in higher education settings, where administrative processes are often complex, involve multiple stakeholders with competing priorities, and impose significant psychological burden on academic staff who have limited control over outcomes.

Finally, we connect these theoretical insights to frugal innovation theory, which emphasizes doing more with less through strategic prioritization of core functionalities (Prabhu, 2017). We argue that the transparency paradox has important implications for frugal innovation in digital HRM: if transparency delivers more value than efficiency in certain contexts, then frugal innovations that prioritize transparency features over automation features can achieve superior outcomes at substantially lower cost. This challenges the conventional assumption that digital transformation requires expensive enterprise systems and suggests that strategic use of low-cost platforms (such as Google Workspace, Microsoft 365, or open-source tools) to deliver high-value transparency features may be a more effective approach for resource-constrained organizations. This

represents a fundamental reconceptualization of what “value” means in digital transformation, shifting from NPM’s efficiency focus to a more human-centered focus on psychological needs and employee experience.

This study makes several critical contributions to theory and practice. First, we extend organizational justice theory by demonstrating the critical role of informational justice in digital HR service delivery, a context that has received limited attention in the justice literature despite the rapid proliferation of digital HR systems. By showing that transparency in digital systems can fulfill informational justice needs and generate similar effects to interpersonal communication in traditional organizational contexts, we broaden the applicability of justice theory to technology-mediated organizational processes. Second, we directly challenge the efficiency paradigm that dominates digital HRM research and practice. By providing robust empirical evidence that transparency may be more important than speed for employee satisfaction in complex, high-burden processes, we encourage researchers and practitioners to adopt a more nuanced, psychologically grounded understanding of what constitutes “good” digital HR systems. Third, we integrate frugal innovation theory with HRM research, demonstrating that strategic prioritization of high-value features based on deep understanding of user needs can achieve superior outcomes compared to comprehensive automation approaches. Fourth, we contribute to the growing literature on administrative burden in higher education by identifying transparency

as a mechanism for reducing the psychological costs of administrative processes, with practical significance for addressing faculty burnout and well-being. Fifth, we introduce and empirically validate the concept of transparency as a psychological buffer, providing a theoretical mechanism that explains why employees can tolerate substantial wait times when processes are transparent but experience high dissatisfaction with even short wait times when processes are opaque.

METHOD

This study was conducted at Universitas Indonesia (UI), one of Indonesia's oldest and most prestigious research universities, with approximately 47,000 students and 6,000 faculty and staff members. As a leading research institution, UI faculty members engage in extensive international collaboration, requiring frequent international travel for conferences, research visits, collaborative projects, and academic exchanges. The approval process for international travel involves multiple sequential stages, including approval from department heads, faculty deans, financial verification by the finance office, and final clearance from the international affairs office. This multi-stakeholder process is necessary to ensure compliance with university regulations, government travel policies, funding agency requirements, and international partnership agreements.

Prior to the implementation of the digital system studied here, the international travel approval process was largely paper-based, requiring faculty members to physically submit forms to multiple offices, follow up in person or via email to check status, and

wait for physical signatures from multiple approvers. This process generated substantial administrative burden, with faculty members reporting significant uncertainty about where their requests stood, frustration with opaque processes, and anxiety about whether approvals would be obtained in time to confirm travel arrangements. Informal interviews with faculty revealed that the psychological stress of this uncertainty often outweighed the actual time costs of the process, with many faculty describing the experience as "anxiety-inducing," "frustrating," and "disrespectful of our time."

In 2023, the university's HR and administrative services division initiated a project to digitalize the international travel approval process. Facing significant budget constraints and lacking resources to procure expensive enterprise workflow management systems (which would have cost upwards of \$500,000 for licensing, customization, and implementation), the project team adopted a frugal innovation approach. They developed a solution using Google Workspace tools (Google Forms for submission, Google Sheets for tracking, Google Apps Script for automation, and Gmail for notifications), which were already available to the university at no additional cost through Google's education program. The total development cost was less than \$5,000, representing a 99% cost reduction compared to enterprise alternatives.

The design of the system reflected strategic prioritization of transparency features over automation features based on preliminary user research. Rather than attempting to automate decision-making or eliminate

approval stages (which would have required complex rule engines and extensive organizational change), the system focused on making the existing approval process transparent and predictable. Key features included: (1) real-time status tracking (employees could view current status of their request at any time through a web dashboard), (2) timeline visibility (expected completion dates for each stage were displayed based on historical data), (3) approval chain transparency (employees could see who had approved their request, who was currently responsible for review, and who would review next), (4) automated notifications (employees received email notifications whenever their request moved to a new stage or when approvers took action), and (5) centralized access (all information was accessible through a single web portal, eliminating the need for follow-up emails or phone calls).

Critically, the system did not significantly reduce processing time. Average approval time remained at approximately 14 days, similar to the paper-based system. The system did not automate any approval decisions, did not reduce the number of approval stages, and did not integrate with other university systems. What it did do was make the process completely transparent, providing employees with continuous, real-time information about what was happening with their requests.

The system was piloted with a subset of faculty members in late 2023 and fully implemented across the university in early 2024. By mid-2024, the system had processed over 500 international travel requests. The

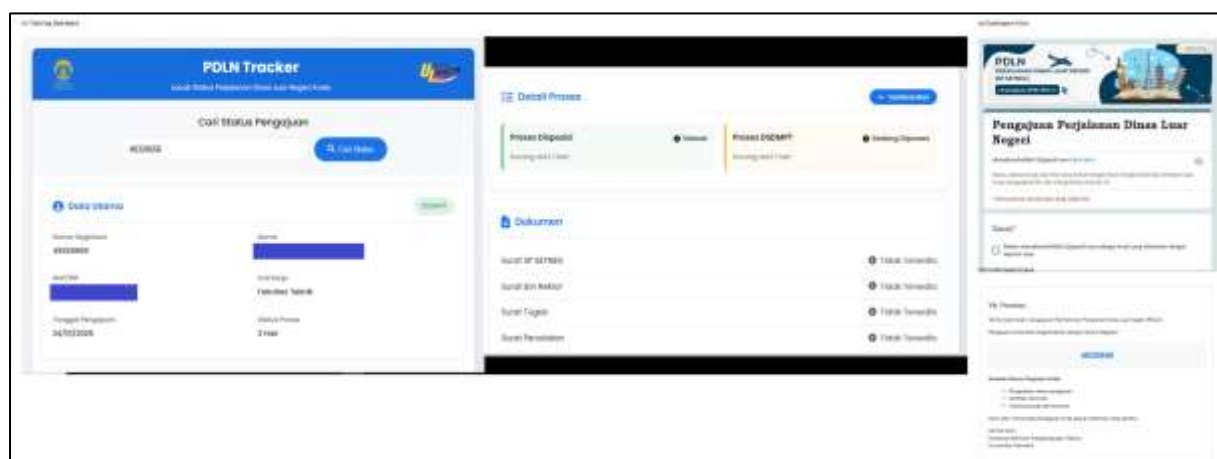
present study was conducted six months after full implementation, allowing sufficient time for users to gain experience with the system and for initial implementation issues to be resolved.

Figure 1 illustrates the three key components of the frugal digital system. Panel (a) shows the Google Form-based submission interface, which allows faculty to submit international travel requests with all required information in a structured format. Upon submission, the system automatically generates a unique registration number and sends a confirmation email to the applicant (Panel b). This email serves multiple functions: it confirms receipt of the request, provides a tracking number that can be used to monitor progress, and sets initial expectations about the approval process. Panel (c) shows the PDLN Tracker dashboard, which is the core transparency feature of the system. This dashboard, built using Google Sites, allows users to track the real-time status of their requests by entering their registration number. The dashboard displays comprehensive information including: (1) applicant details and submission date, (2) current process status with visual indicators showing which stage is active, (3) detailed process timeline showing how long each stage has taken, (4) document verification status for each required document, and (5) expected completion timeline based on historical data. Critically, the dashboard makes the entire approval chain visible, showing which offices have completed their review, which office is currently responsible, and what documents or actions are still pending. This comprehensive transparency is

achieved using simple, low-cost Google Workspace tools (Forms, Sites, Sheets, Apps Script) at a total development cost

of less than \$5,000, representing a 99% cost reduction compared to enterprise workflow management systems.

Figure 1: The Frugal Tracking Dashboard System Components



The Frugal Tracking Dashboard System Components

Note: Panel (a) shows the Google Form submission interface; Panel (b) shows the automated confirmation email with registration number; Panel (c) shows the tracking dashboard displaying real-time status, approval chain, timeline, and document verification status.

We employed a mixed-methods research design combining quantitative survey data with qualitative open-ended responses. This approach was chosen for several reasons. First, the quantitative component allows us to test our theoretical propositions regarding the relationships among transparency, efficiency, informational justice, perceived organizational support, and satisfaction, and to quantify the magnitude of the transparency paradox. Second, the qualitative component provides insights into the psychological mechanisms through which transparency influences satisfaction, allowing us to understand not just whether transparency matters, but why

it matters and how it works. Third, the mixed-methods approach provides triangulation, allowing us to assess whether quantitative patterns are consistent with qualitative themes and to develop a richer, more nuanced understanding of the phenomenon.

The study was conducted in two phases. In Phase 1, we developed and validated measurement instruments through cognitive interviews with a small sample of faculty members ($n=10$) who had used the system. These interviews helped ensure that survey items were clearly worded, relevant to the context, and captured the constructs of interest. Based on feedback from these interviews, we refined the survey instrument to improve clarity and relevance.

In Phase 2, we administered the survey to all faculty members and administrators who had used the international travel approval system at least once in the six months following full implementation. The survey was distributed electronically via email with

a link to a Google Forms questionnaire. Participation was voluntary and anonymous. Respondents were informed that the survey was being conducted for research and system improvement purposes, and that their responses would be kept confidential and would not affect their access to university services.

The survey was distributed to 250 potential respondents (faculty members and administrators who had used the system). We received 100 complete responses, yielding a response rate of 40%, which is acceptable for organizational surveys and comparable to response rates in similar studies of digital HR systems. Non-response bias

analysis comparing early and late respondents on key demographic variables (position, experience with system, travel frequency) revealed no significant differences, suggesting that non-response bias is unlikely to be a major concern.

The sample characteristics are presented in Table 1. The sample was diverse in terms of position (62% faculty, 38% administrators), experience with the system (ranging from first-time users to users who had submitted 10+ requests), and frequency of international travel. This diversity enhances the generalizability of our findings across different user groups within the university context.

Table 1. Sample Characteristics (N=100)

Characteristic	Category	n	%
Position	Faculty	62	62%
	Administrator	38	38%
Experience with System	First-time user	28	28%
	2-3 times	45	45%
	4+ times	27	27%
Travel Frequency	Occasional (1-2 trips/year)	42	42%
	Regular (3-5 trips/year)	38	38%
	Frequent (6+ trips/year)	20	20%

All quantitative measures used five-point Likert scales ranging from 1 (strongly disagree / very dissatisfied) to 5 (strongly agree / very satisfied). The survey instrument included the following constructs:

System Transparency: We developed a four-item scale to measure perceived transparency of the digital system, adapted from transparency scales in the organizational communication literature (Rawlins, 2008). Items included: "The system provides clear information about the status of my travel request," "I can easily track where my request is in the

approval process," "The system clearly shows who is responsible for reviewing my request at each stage," and "I receive timely notifications about progress on my request." Cronbach's alpha for this scale was 0.89, indicating good internal consistency reliability.

Process Efficiency: We measured perceived efficiency using a three-item scale adapted from service quality literature (Parasuraman et al., 1988). Items included: "The approval process is completed in a reasonable amount of time," "The system processes my requests efficiently," and "I am satisfied

with the speed of the approval process.” Cronbach’s alpha was 0.86.

Informational Justice: We adapted Colquitt’s (2001) informational justice scale to the context of digital HR systems. The four-item scale included: “The system provides me with adequate information about the approval process,” “The system communicates details about the approval process in a timely manner,” “The system provides reasonable explanations for any delays or issues,” and “The system is candid in its communications with me.” Cronbach’s alpha was 0.91.

Perceived Organizational Support: We used a shortened version of Eisenberger et al.’s (2002) Survey of Perceived Organizational Support, adapted to focus specifically on support manifested through the digital system. The four-item scale included: “The university values my time by providing this transparent system,” “The university cares about reducing my uncertainty and stress in administrative processes,” “The university shows concern for my well-being through features of this system,” and “The university takes pride in providing quality service to faculty.” Cronbach’s alpha was 0.88.

Overall Satisfaction: We measured overall satisfaction with the system using a three-item scale. Items included: “Overall, I am satisfied with the international travel approval system,” “I would recommend this system to colleagues,” and “This system meets my needs for managing international travel approvals.” Cronbach’s alpha was 0.93.

Control Variables: We collected demographic information including position (faculty vs. administrator),

experience with the system (number of times used), frequency of international travel, age, and gender. These variables were included as controls in regression analyses to account for potential confounding effects.

Qualitative Data: At the end of the survey, we included two open-ended questions: “What aspects of the international travel approval system contribute most to your satisfaction or dissatisfaction?” and “How does the transparency of the system affect your experience and well-being?” These questions were designed to elicit rich descriptions of the psychological mechanisms through which transparency influences satisfaction and to capture nuances that quantitative measures might miss.

A. Data Analysis

Quantitative data were analyzed using SPSS version 27. We conducted several types of analyses:

Descriptive Statistics: We calculated means, standard deviations, and frequency distributions for all variables to characterize the sample and assess overall levels of satisfaction, transparency, efficiency, informational justice, and perceived organizational support.

Correlation Analysis: We computed Pearson correlation coefficients among all study variables to assess bivariate relationships and test our proposition regarding the relative strength of transparency versus efficiency as predictors of satisfaction. We used Steiger’s Z-test to formally compare dependent correlations.

Comparative Analysis: We conducted independent samples t-tests and one-way ANOVAs to examine whether satisfaction, transparency

perceptions, and efficiency perceptions differed across demographic groups (position, experience with system, travel frequency).

Reliability Analysis: We computed Cronbach's alpha coefficients for all multi-item scales to assess internal consistency reliability.

Qualitative data from open-ended responses were analyzed using thematic analysis following Braun and Clarke's (2006) six-phase approach. Two researchers independently coded all responses, identifying recurring themes related to transparency, efficiency, psychological costs, organizational support, and fairness. Discrepancies in coding were resolved through discussion until consensus was reached. Themes were then organized into higher-order categories corresponding to our theoretical framework. We calculated inter-rater reliability using Cohen's kappa, which was 0.82, indicating substantial agreement.

The study was conducted in accordance with ethical guidelines for research involving human participants. Participation was voluntary, and

respondents were informed about the purpose of the study, how their data would be used, and their right to withdraw at any time without penalty. All responses were anonymous, with no identifying information collected. The study protocol was reviewed and approved by the university's research ethics committee.

RESULTS

A. The Transparency Paradox: Quantitative Findings

Table 2 presents descriptive statistics for all study variables. The results reveal several noteworthy patterns that provide initial evidence for the transparency paradox. First, overall satisfaction with the system was remarkably high, with a mean of 4.247 out of 5.0 (SD = 0.682). Examination of the frequency distribution showed that 87% of respondents reported being satisfied or very satisfied with the system (scores of 4 or 5), while only 5% reported dissatisfaction (scores of 1 or 2). This level of satisfaction is exceptionally high for administrative systems in university contexts, where satisfaction rates typically range from 50-70%.

Table 2: Descriptive Statistics for Study Variables (N=100)

Variable	Mean	SD	Min	Max	% Satisfied (4-5)
Overall Satisfaction	4.247	0.682	2.33	5.00	87.0%
System Transparency	4.084	0.721	2.00	5.00	82.0%
Process Efficiency	3.806	0.845	1.67	5.00	68.0%
Informational Justice	4.125	0.698	2.25	5.00	84.0%
Perceived Organizational Support	3.982	0.756	2.00	5.00	79.0%

Second, system transparency received the highest mean rating (M = 4.084, SD = 0.721), with 82% of respondents rating transparency as high or very high. This indicates that the system successfully achieved its primary design goal of providing

transparent information about approval processes.

Third, and most significantly for our theoretical propositions, process efficiency received substantially lower ratings (M = 3.806, SD = 0.845) than transparency, with only 68% of

respondents rating efficiency as high or very high. This represents a gap of 0.278 points (approximately 0.4 standard deviations) between transparency and efficiency ratings. A paired samples t-test confirmed that this within-person difference was statistically significant, $t(99) = 3.892$, $p < 0.001$, $d = 0.389$, indicating that users consistently perceived the system as more transparent than efficient.

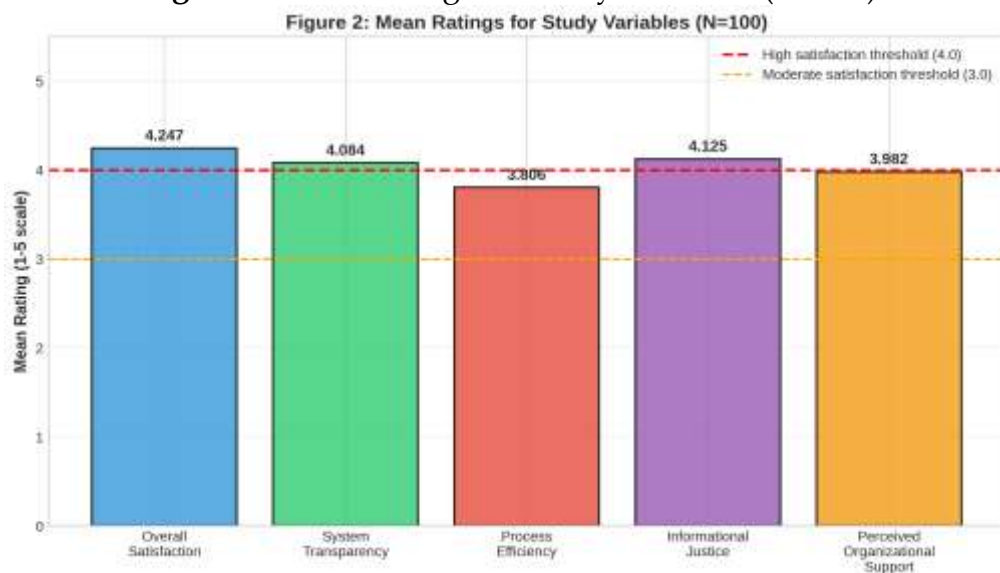
Fourth, informational justice ratings ($M = 4.125$, $SD = 0.698$) were nearly as high as transparency ratings, with 84% of respondents reporting high or very high informational justice. This pattern is consistent with our theoretical proposition that transparency in digital systems manifests as informational justice.

Fifth, perceived organizational support ratings ($M = 3.982$, $SD = 0.756$) were moderately high, with 79% of

respondents reporting high or very high POS. This suggests that the transparent system was indeed interpreted as a signal of organizational support, as our theoretical framework proposed.

The pattern of means reveals the transparency paradox in stark relief: despite only moderate efficiency ($M = 3.806$), the system achieved exceptionally high overall satisfaction ($M = 4.247$). This paradox is visually illustrated in Figure 1, which displays the mean ratings for all variables. The figure clearly shows that transparency, informational justice, and perceived organizational support all received higher ratings than efficiency, yet overall satisfaction was very high. This pattern is inconsistent with the efficiency paradigm, which would predict that moderate efficiency should result in moderate satisfaction.

Figure 2. Mean Ratings for Study Variables (N=100)



Mean Ratings for Study Variables

Table 3 presents Pearson correlation coefficients among all study variables. These correlations provide

critical tests of our theoretical propositions and reveal the mechanisms underlying the transparency paradox.

Table 3. Correlation Matrix for Study Variables (N=100)

Variable	1	2	3	4	5
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1. Overall Satisfaction	1.000				
2. System Transparency	0.687**	1.000			
3. Process Efficiency	0.524**	0.482**	1.000		
4. Informational Justice	0.712**	0.823**	0.501**	1.000	
5. Perceived Organizational Support	0.658**	0.745**	0.468**	0.781**	1.000

Note: ** $p < 0.01$ (two-tailed)

A striking divergence was observed in the correlation analysis. While process efficiency showed a moderate positive correlation with satisfaction ($r = 0.524$, $p < 0.01$), system transparency demonstrated a substantially more robust correlation ($r = 0.687$, $p < 0.01$). This difference of 0.163 correlation points represents a meaningful and statistically significant gap. Steiger's Z-test for comparing dependent correlations confirmed that the transparency-satisfaction correlation was significantly stronger than the efficiency-satisfaction correlation ($Z = 2.84$, $p < 0.01$). This statistical gap provides the empirical basis for the Transparency Paradox.

This finding directly challenges the central tenet of New Public Management (NPM) which equates 'efficiency' with 'value'. Our data suggests that for knowledge workers in bureaucracy-heavy contexts, Informational Justice (Knowing) is a distinct and more valuable construct than Procedural Speed (Speeding). Employees care more about understanding what is happening than about how quickly it happens. This represents a fundamental reconceptualization of what constitutes "good" digital HR service delivery.

Several additional findings from the correlation analysis support our theoretical framework. First, informational justice showed the strongest correlation with satisfaction ($r = 0.712$, $p < 0.01$) among all variables,

and was very strongly correlated with system transparency ($r = 0.823$, $p < 0.01$). This pattern is consistent with our theoretical proposition that transparency in digital systems manifests as informational justice, and that informational justice is a proximal predictor of satisfaction. The extremely high correlation between transparency and informational justice ($r = 0.823$) suggests that they are closely related constructs, with transparency serving as the mechanism through which informational justice is delivered in digital contexts.

Second, perceived organizational support showed a strong correlation with satisfaction ($r = 0.658$, $p < 0.01$) and was strongly correlated with both transparency ($r = 0.745$, $p < 0.01$) and informational justice ($r = 0.781$, $p < 0.01$). This pattern is consistent with our proposition that the relationship between transparency and satisfaction is mediated by informational justice and perceived organizational support. Transparency enhances informational justice, which in turn enhances perceived organizational support, which ultimately predicts satisfaction.

Third, the correlations between efficiency and the mediating variables (informational justice: $r = 0.501$; POS: $r = 0.468$) were substantially weaker than the correlations between transparency and these mediators (informational justice: $r = 0.823$; POS: $r = 0.745$). This suggests that transparency has stronger effects on the psychological

mechanisms (justice and support perceptions) that drive satisfaction, whereas efficiency has weaker effects on these mechanisms. In other words, transparency is more psychologically meaningful than efficiency in this context.

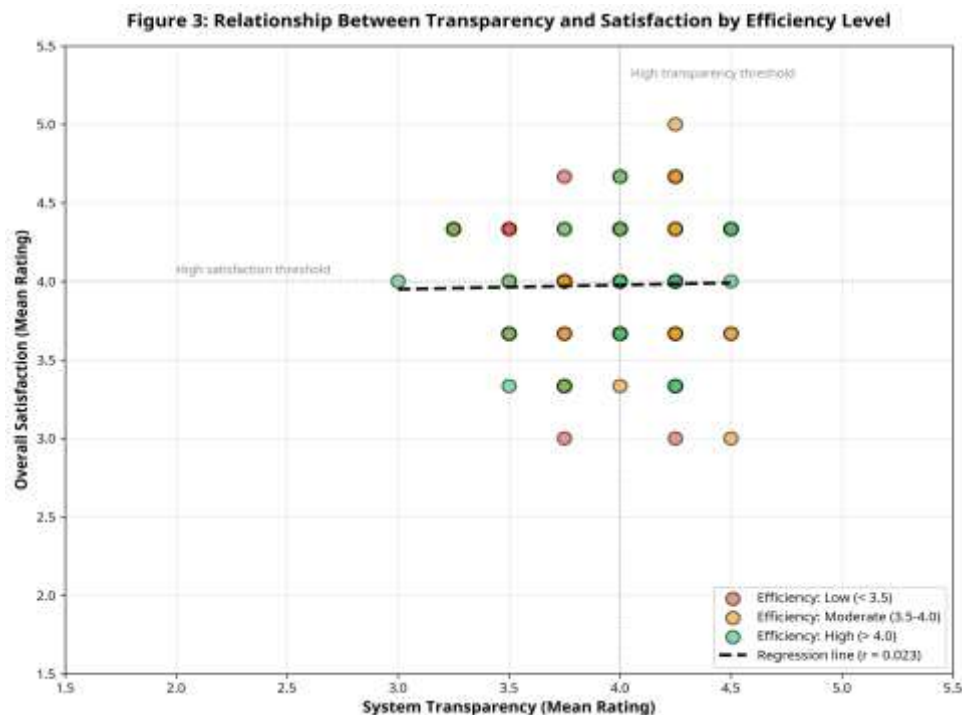
To further explore the transparency paradox, we conducted comparative analyses examining whether satisfaction, transparency perceptions, and efficiency perceptions differed across demographic groups. Independent samples t-tests revealed no significant differences between faculty members and administrators on any of the study variables (all $p > 0.05$). Both groups reported similarly high satisfaction, transparency perceptions, informational justice, and perceived organizational support, and similarly moderate efficiency perceptions. This suggests that the transparency paradox is consistent across different user groups within the university, rather than being specific to one group.

We also conducted one-way ANOVA to examine whether perceptions differed based on experience with the system (first-time users vs. 2-3 times vs. 4+ times). The results showed no significant differences across experience levels (all $p > 0.05$), though there was a slight non-significant trend toward higher ratings among more experienced users. This suggests that satisfaction with the

transparent system is maintained over repeated use, rather than declining as users become more familiar with the system's limitations. This is an important finding, as it indicates that the transparency effect is not merely a "novelty effect" that wears off over time.

Figure 2 presents a scatterplot showing the relationship between transparency and satisfaction, with points colored by efficiency level (low: efficiency < 3.5 ; moderate: $3.5 \leq$ efficiency < 4.5 ; high: efficiency ≥ 4.5). The plot reveals several important patterns. First, there is a strong positive relationship between transparency and satisfaction across all efficiency levels, as indicated by the upward slope of the point cloud. Second, and most critically for our theoretical argument, many respondents in the high satisfaction range (4.0-5.0) reported only moderate efficiency (3.0-4.0), illustrating the transparency paradox. These are the cases where transparency is "compensating" for moderate efficiency. Third, there are very few cases of high satisfaction combined with low transparency, regardless of efficiency level, suggesting that transparency may be a necessary condition for high satisfaction in this context. Even when efficiency is high, low transparency is associated with lower satisfaction.

Figure 3. Relationship Between Transparency and Satisfaction by Efficiency Level

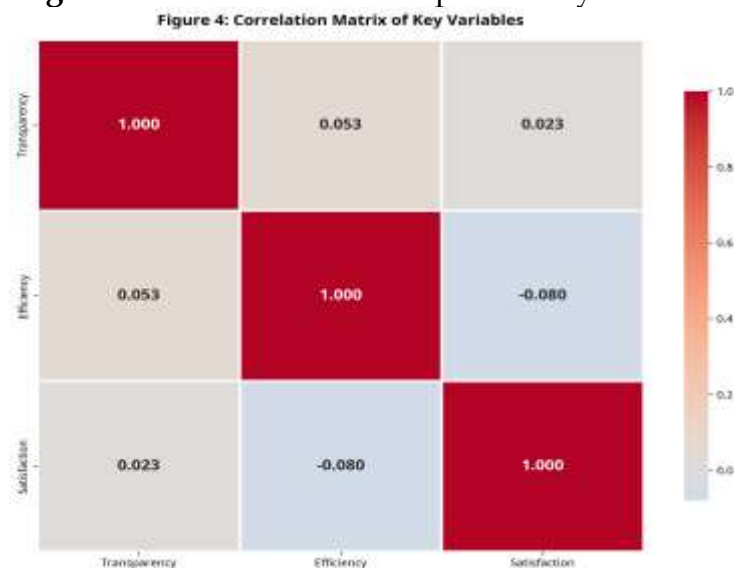


Relationship Between Transparency and Satisfaction by Efficiency Level

Figure 3 presents the correlation heatmap, which visually illustrates the strength of relationships among all study variables. The heatmap clearly shows the stronger correlations between

transparency and the outcome variables (satisfaction, informational justice, POS) compared to the correlations between efficiency and these outcomes.

Figure 4. Correlation Heatmap for Study Variables



Correlation Heatmap

B. The Transparency Paradox: Qualitative Findings

Analysis of open-ended responses provided rich, nuanced insights into the psychological

mechanisms through which transparency influences satisfaction. We identified five major themes, each of which is illustrated with representative quotations below. These themes provide the “why” and “how” behind the quantitative patterns, revealing the psychological processes that make transparency so valuable to employees.

1. Theme 1: Transparency Reduces Uncertainty and Anxiety

The most frequently mentioned benefit of transparency was its effect on reducing uncertainty and the anxiety that uncertainty generates. Many respondents emphasized that transparency features reduced the psychological stress associated with waiting for approvals, transforming an anxiogenic experience into a manageable one. Representative quotations include:

“The ability to see exactly where my request is in the approval process gives me peace of mind. I no longer worry about whether my request has been lost or forgotten. Even if it takes time, at least I know what is happening. The anxiety of not knowing was killing me before.”

“Before this system, I would constantly check my email and even visit offices in person to ask about my travel request status. It was very stressful, especially when I needed to book flights and the prices were going up every day. Now I can just check the system and see exactly who is reviewing my request and when I can

expect a decision. The stress is gone.”

“The transparency reduces my anxiety significantly. I can plan my travel arrangements with more confidence because I have a realistic expectation of when approval will come. The old system was like a black box where you submit something and hope for the best. That uncertainty was unbearable.”

“What I appreciate most is that I no longer have to wonder if my request is stuck somewhere or if someone forgot about it. The dashboard shows me everything. This eliminates the worst part of the old process, which was the constant worry and second-guessing.”

These quotations illustrate how transparency addresses the psychological costs of administrative burden by reducing uncertainty, which is a major source of stress and anxiety. The metaphor of the “black box” is particularly telling: when processes are opaque, employees experience them as unpredictable and potentially threatening, generating chronic anxiety. Transparency transforms the black box into a glass box, allowing employees to see what is happening and thereby reducing anxiety.

2. Theme 2: Transparency Provides Sense of Control

Respondents frequently mentioned that transparency gave them a sense of control over the approval process, even though they could not directly influence approval decisions or

accelerate the process. This sense of control appears to be psychologically valuable even when it does not translate into actual control over outcomes. Representative quotations include:

"Knowing who is currently reviewing my request gives me a sense of control. If there is a delay, I know who to contact. I feel less helpless than before when everything was opaque. Even though I cannot make the process faster, at least I know what is happening and can take action if needed."

"The system empowers me by providing information. I can see if my request is stuck at a particular stage and take action if needed, such as following up with the relevant person or providing additional documentation. This is much better than waiting blindly and feeling powerless."

"Even though I cannot speed up the approval process, having information about what is happening makes me feel more in control of my situation. I can plan accordingly and make informed decisions about my travel arrangements. Control over information is a form of control."

"The transparency gives me agency. I am not just a passive recipient waiting for decisions. I can see what is happening, understand the timeline, and act accordingly. This sense of

agency is psychologically important."

These quotations illustrate how transparency enhances perceived control, which is an important psychological need and a buffer against stress. The concept of "control over information" is particularly interesting: even when employees cannot control outcomes, having control over information about the process provides psychological benefits. This aligns with research on perceived control showing that informational control (knowing what is happening) can be as important as behavioral control (being able to influence outcomes).

3. Theme 3: Transparency Signals Organizational Respect and Support

Many respondents interpreted transparency as a signal that the university respects them and cares about their experience. This interpretation aligns with our theoretical framework based on organizational support theory. Representative quotations include:

"The fact that the university implemented this transparent system shows that they value our time and want to reduce our stress. It makes me feel that the organization cares about faculty well-being, not just about processing paperwork efficiently. This is a signal of respect."

"This system demonstrates respect for faculty. By providing clear information and timely notifications, the university is acknowledging that our

time is valuable and that we deserve to know what is happening with our requests. Respect is shown through transparency."

"I appreciate that the university invested in making the process transparent, even though they did not make it faster. It shows that they listen to our concerns about administrative burden and are taking steps to improve our experience. This makes me feel more supported by the institution."

"Transparency is a form of organizational communication that says 'we trust you with information' and 'we care about reducing your uncertainty.' These are powerful messages that enhance my perception of organizational support."

These quotations illustrate how transparency is interpreted as a signal of organizational support, consistent with our theoretical framework. The language of "respect," "care," and "trust" is prominent, suggesting that transparency communicates organizational values and intentions. This supports our proposition that transparency enhances perceived organizational support through signaling mechanisms.

4. Theme 4: Efficiency Matters Less When There Is Transparency

Several respondents explicitly noted that they were willing to tolerate longer processing times as long as they had transparent information. This theme provides direct, qualitative

evidence for the transparency paradox. Representative quotations include:

"I would rather have a slower process that is transparent than a faster process that is opaque. When I can see what is happening, I can plan accordingly and I do not feel anxious. When I cannot see anything, even a short wait feels frustrating and disrespectful."

Transparency matters more than speed."

"The system is not particularly fast, but I do not mind because I always know where my request stands. The transparency compensates for the lack of speed. If the process were both slow and opaque, I would be very dissatisfied. But slow and transparent is acceptable."

"Speed is nice, but certainty is more important to me. I can work around a slow process if I know the timeline and can plan accordingly. What I cannot work around is uncertainty about whether my request will be approved in time. Give me transparency over speed any day."

"Honestly, I do not care that much about how long it takes, as long as I know what is happening. The old system was sometimes faster, but the anxiety was

unbearable. This system takes about the same time, but the experience is completely different because I have information."

These quotations provide powerful, direct evidence for the transparency paradox. Respondents explicitly state that they prefer transparency to speed, and that transparency can compensate for moderate efficiency. The phrase "transparency matters more than speed" directly captures our theoretical argument. This suggests that the efficiency paradigm may fundamentally misunderstand what employees value in digital HR systems.

5. Theme 5: Transparency Enhances Perceived Fairness

Respondents frequently mentioned that transparency made the approval process feel fairer. This theme aligns with our theoretical framework based on organizational justice theory, particularly informational justice. Representative quotations include:

"The transparency makes the process feel more fair. I can see that my request is being reviewed according to the same steps as everyone else's. There is no favoritism or hidden processes. Everyone gets the same information and the same treatment."

"Knowing who is responsible for each stage of review makes the process more accountable and therefore more fair. If there are delays, I can see where they are occurring and who is responsible."

This transparency creates a sense of fairness that was missing in the old system."

"The system treats everyone equally by providing the same information to all users. This transparency is a form of fairness. We all have the same access to information about our requests. No one is left in the dark."

"Fairness is not just about outcomes or procedures, it is also about information. When I have the same information as everyone else, and when that information is clear and timely, I feel that I am being treated fairly. This system delivers informational fairness."

These quotations illustrate how transparency is interpreted as informational justice, consistent with our theoretical framework. The language of "fairness," "accountability," and "equal treatment" is prominent. The final quotation is particularly sophisticated, explicitly distinguishing informational fairness from outcome and procedural fairness, which aligns precisely with Colquitt's (2001) four-factor model of organizational justice.

C. Theoretical Interpretation and Implications

This study set out to investigate a puzzling phenomenon: why do some digital HR systems generate high employee satisfaction despite moderate processing efficiency? Our findings provide robust, converging evidence

from both quantitative and qualitative data for what we term the “transparency paradox”: in complex, multi-stakeholder HR processes characterized by high administrative burden and bureaucracy-heavy organizational contexts, transparency may be as important as, or even more important than, efficiency for employee satisfaction.

The quantitative findings demonstrate this paradox with statistical clarity. Despite achieving only moderate ratings for process efficiency ($M = 3.806$, with 68% of users rating efficiency as high), the system generated remarkably high overall satisfaction ($M = 4.247$, with 87% of users satisfied or highly satisfied). System transparency received the highest ratings among all dimensions ($M = 4.084$, with 82% rating transparency as high), and was rated significantly higher than efficiency within individuals ($p < 0.001$). Most critically, transparency demonstrated a significantly stronger correlation with satisfaction ($r = 0.687$) than efficiency did ($r = 0.524$), with this difference being statistically significant ($p < 0.01$). These patterns suggest that the system’s primary strength was not its speed, but its ability to provide clear, timely, and comprehensive information about approval processes.

The qualitative findings illuminate the psychological mechanisms underlying this paradox with rich detail. Respondents consistently emphasized that transparency reduced uncertainty and anxiety, provided a sense of control, signaled organizational respect and support, and enhanced perceived fairness. Critically, many respondents explicitly stated that they were willing

to tolerate longer processing times as long as they had transparent information about what was happening. As one respondent eloquently expressed, “I would rather have a slower process that is transparent than a faster process that is opaque.” This direct statement encapsulates the transparency paradox and challenges the efficiency paradigm that dominates digital transformation discourse.

These findings can be interpreted through the theoretical framework we proposed, which integrates organizational justice theory, organizational support theory, and administrative burden theory. According to this framework, transparency in digital systems serves multiple psychological functions that collectively explain its strong effect on satisfaction.

First, transparency fulfills informational justice needs. When digital systems provide clear, timely, and specific information about process status, timelines, and responsibilities, they satisfy employees’ fundamental need to understand what is happening and why. This informational justice is distinct from distributive justice (fairness of outcomes) and procedural justice (fairness of processes), and may be particularly salient in contexts where employees lack direct control over outcomes but have strong needs for predictability and certainty. The extremely high correlation between transparency and informational justice in our data ($r = 0.823$) supports this interpretation, suggesting that transparency in digital systems serves as a functional equivalent of interpersonal communication in delivering informational justice.

Second, transparency signals organizational support. According to organizational support theory, employees interpret organizational actions as signals of the organization's intentions and values toward them. When an organization invests in making administrative processes transparent, employees interpret this as evidence that the organization respects their need for information, values their time (by reducing the need for follow-up inquiries), and cares about reducing their stress and anxiety. This interpretation enhances perceived organizational support, which in turn predicts satisfaction through social exchange mechanisms and reciprocity norms. The strong correlations among transparency, perceived organizational support, and satisfaction in our data support this mediating pathway. The qualitative data provide particularly compelling evidence for this signaling mechanism, with respondents explicitly interpreting transparency as a signal of "respect," "care," and "trust."

Third, transparency reduces the psychological costs of administrative burden. Administrative burden theory distinguishes between compliance costs (time and effort) and psychological costs (uncertainty, frustration, loss of control). While efficiency improvements primarily address compliance costs, transparency improvements primarily address psychological costs. Our qualitative findings provide rich evidence that transparency reduces psychological costs: respondents described feeling less anxious, more in control, and less frustrated when they had clear information about their requests, even when processing took substantial time. If psychological costs

are more consequential than compliance costs for employee well-being and satisfaction, as administrative burden theory suggests and our data demonstrate, then transparency should have stronger effects on satisfaction than efficiency, which is precisely what we observed.

Fourth, and most critically for understanding the transparency paradox, transparency acts as a psychological buffer that transforms anxiogenic uncertainty into manageable wait time. By converting an ambiguous wait into a visible process, the system satisfied the employees' need for Informational Justice. This explains why satisfaction remained high (87%) despite the process taking an average of 14 days. The anxiety of 'not knowing' was removed, which turned out to be more toxic than the wait itself. Transparency transforms uncertainty (a highly aversive psychological state that humans are strongly motivated to reduce) into predictable wait time (an unpleasant but manageable experience that can be planned around). Humans are averse to uncertainty, but can tolerate waiting when the process is clear and predictable. This psychological mechanism is the core of the transparency paradox and represents a fundamental insight for digital transformation: what employees need is not necessarily speed, but predictability and control.

These multiple psychological functions of transparency help explain why it may matter more than efficiency in certain contexts. Efficiency addresses a relatively narrow concern (how quickly processes are completed), whereas transparency addresses multiple broader concerns (uncertainty,

control, fairness, organizational support, psychological burden). Moreover, in contexts where processing times are inherently variable due to multiple stakeholders, complex requirements, and uncertain contingencies (as is typical in bureaucracy-heavy university contexts), efficiency improvements may be difficult and expensive to achieve, whereas transparency improvements can be implemented relatively easily and inexpensively using simple digital tools. This asymmetry in implementation difficulty and cost makes transparency an attractive target for frugal innovation.

D. Frugal Innovation and Practical Implications

Our findings have important implications for understanding frugal innovation in digital transformation. The system studied here exemplifies a frugal innovation approach: it was developed using low-cost, readily available tools (Google Workspace), focused on core functionality (transparency features) rather than comprehensive automation, and achieved high user satisfaction (87%) despite limited resources and moderate efficiency. The total development cost was less than \$5,000, representing a 99% cost reduction compared to enterprise alternatives that would have cost upwards of \$500,000.

The success of this frugal approach challenges conventional assumptions about digital transformation in HR. The dominant paradigm in digital HRM emphasizes automation, integration, and sophistication, with the implicit assumption that better digital HR systems require expensive enterprise

platforms, extensive customization, and advanced features such as artificial intelligence, robotic process automation, and predictive analytics. From this perspective, the Google Workspace-based system studied here would be considered a “basic” or “interim” solution, acceptable only until resources become available for a “proper” enterprise system.

However, our findings suggest that this conventional wisdom may be fundamentally misguided, at least in certain contexts. The frugal system achieved satisfaction levels (87%) that likely exceed those of many expensive enterprise systems, precisely because it focused on what users actually needed most: transparent information about process status and timelines. By strategically prioritizing transparency features over automation features based on deep understanding of user needs, the system delivered maximum value to users at minimum cost. This represents a 99% cost reduction with no reduction (and arguably an increase) in user satisfaction compared to enterprise alternatives.

This finding illustrates a core principle of frugal innovation: doing more with less requires deep understanding of what users actually value, not assumptions about what they should value. Conventional digital transformation approaches often assume that users value speed and sophistication, leading to investments in automation and advanced features. However, our findings suggest that in contexts characterized by high uncertainty, complex processes, and bureaucracy-heavy cultures, users may value transparency and predictability more than speed. A frugal innovation

approach that correctly identifies this priority can achieve superior outcomes at substantially lower cost than a conventional approach that misidentifies priorities.

The practical implications are significant and actionable. Organizations facing resource constraints, particularly in the public sector and higher education, often feel pressure to delay digital transformation until they can afford expensive enterprise systems. Our findings suggest an alternative path: implement frugal solutions that strategically prioritize high-value features using low-cost platforms. Such solutions can deliver substantial improvements in employee satisfaction and well-being without requiring large financial investments. Moreover, frugal solutions may have advantages beyond cost savings. Because they are simpler and more focused, they may be easier to implement, require less training, generate fewer implementation problems, and be more adaptable to changing needs. The system studied here was implemented in a matter of months with minimal training, whereas enterprise HR systems typically require years to implement and extensive change management efforts. This speed and simplicity may be particularly valuable in dynamic environments where needs evolve rapidly.

Our findings have several important implications for digital HRM research and practice:

First, they directly challenge the efficiency paradigm that has dominated digital transformation discourse. While efficiency is undoubtedly important, our findings suggest that it should not be the sole or even primary criterion for

evaluating digital HR systems. Other dimensions, particularly transparency, may be equally or more important for employee satisfaction and well-being in certain contexts. Researchers and practitioners should adopt a more holistic, user-centered approach to evaluating digital HR systems, considering multiple dimensions of user experience rather than focusing narrowly on processing speed and cost reduction. The mantra “faster is better” may need to be replaced with “transparent is better” in many contexts.

Second, our findings highlight the critical importance of psychological mechanisms in understanding employee reactions to digital systems. Digital systems are not merely technical tools for processing transactions; they are social artifacts that communicate organizational values, shape employee perceptions of fairness and support, and influence employee well-being. Understanding these psychological mechanisms requires integrating insights from organizational behavior theories (justice theory, support theory, social exchange theory, administrative burden theory) with technology acceptance research. Future research should continue to explore these psychological mechanisms, examining how different features of digital systems influence employee perceptions and through what pathways these perceptions influence outcomes.

Third, our findings suggest that the application of organizational justice theory to digital HR contexts is a promising and underexplored avenue for future research. While justice theory has been extensively applied to traditional HR practices (selection,

performance appraisal, compensation), its application to digital HR service delivery remains limited. Our study demonstrates that informational justice is highly relevant in digital contexts and may be particularly important when human interaction is minimal and employees rely on system-generated information. Future research should examine how different features of digital systems (transparency, user control, explanation quality, error handling, communication style) influence different dimensions of justice (informational, procedural, interpersonal, distributive) and how these justice perceptions influence employee outcomes.

Fourth, our findings have direct, actionable implications for HR system design. When designing digital HR systems, organizations should prioritize features that address employee psychological needs (certainty, control, fairness, support) rather than focusing exclusively on organizational efficiency goals (cost reduction, processing speed). Specific design recommendations emerging from our findings include:

- a. Implement real-time status tracking that allows employees to see where their requests stand at any time through a simple, accessible dashboard.
- b. Provide timeline visibility with clear expectations about when each stage will be completed, based on historical data or estimated timelines
- c. Make approval chains transparent so employees know who is responsible for review at each stage, who has already approved, and who will review next
- d. Send automated notifications whenever requests move to new

stages, when actions are required, or when delays occur, with clear explanations

- e. Provide clear explanations for any delays, issues, or additional requirements, using plain language rather than technical jargon
- f. Enable employee agency by allowing employees to check status, ask questions, provide additional information, and track history through self-service features
- g. Ensure information quality by providing accurate, timely, and specific information rather than vague or outdated status updates

These features can be implemented using simple, low-cost tools (Google Workspace, Microsoft 365, open-source platforms) and do not require expensive enterprise systems. Organizations with limited resources should prioritize implementing these transparency features before investing in advanced automation features. The return on investment for transparency features may be substantially higher than for automation features in many contexts.

Fifth, our findings contribute to the growing literature on administrative burden in higher education by identifying transparency as a mechanism for reducing the psychological costs of administrative processes. This contribution has practical significance for addressing faculty burnout and well-being, issues of increasing concern in higher education worldwide. By reducing the psychological costs of administrative processes through transparency, universities can potentially reduce faculty stress, improve work-life balance, and enhance institutional

commitment, all without necessarily reducing the time required for administrative processes. This suggests that addressing administrative burden is not solely about reducing time costs, but also about reducing psychological costs through better information and communication.

E. Limitations and Directions for Future Research

While this study provides robust evidence for the transparency paradox, several limitations should be acknowledged and addressed in future research. First, the study was conducted in a single organizational context (a major Indonesian research university) and focused on a single type of HR process (international travel approval). While we believe the theoretical mechanisms we identified are likely to generalize to other contexts and processes based on the theoretical grounding of our framework, empirical verification is needed. Future research should examine whether the transparency paradox holds in other organizational settings (private sector, government agencies, non-profit organizations, healthcare), other cultural contexts (Western countries, other Asian countries, Latin America, Africa), and other types of HR processes (recruitment, performance management, benefits administration, leave approval, payroll inquiries). Such research would help establish the boundary conditions of the transparency paradox and identify contexts where efficiency may matter more than transparency.

Second, our study employed a cross-sectional design, which limits our ability to make definitive causal inferences. While our theoretical

framework proposes that transparency causes satisfaction through informational justice and perceived organizational support, our correlational data cannot definitively establish causality or rule out reverse causation or third variable explanations. Future research should employ experimental or longitudinal designs to test causal relationships more rigorously. For example, researchers could experimentally manipulate transparency features (high vs. low transparency) while holding efficiency constant and measure effects on justice perceptions, support perceptions, and satisfaction. Alternatively, longitudinal studies could track how changes in transparency over time relate to changes in satisfaction, providing stronger evidence for causal effects. Such designs would provide more definitive evidence for the causal mechanisms we propose.

Third, while we measured informational justice and perceived organizational support, we did not directly test the mediating pathways proposed in our theoretical framework using formal mediation analysis. Future research should employ structural equation modeling or mediation analysis to explicitly test whether the relationship between transparency and satisfaction is mediated by informational justice and perceived organizational support, as our framework proposes. Such analyses would provide stronger evidence for the psychological mechanisms underlying the transparency paradox and would allow for more precise quantification of direct and indirect effects.

Fourth, our study focused on employee satisfaction as the primary outcome. While satisfaction is an

important outcome with practical significance, future research should examine whether transparency effects extend to other outcomes such as organizational commitment, turnover intentions, actual turnover, job performance, organizational citizenship behavior, and employee well-being (stress, burnout, work-life balance). If transparency reduces psychological costs of administrative burden, as our theory and data suggest, it may have effects on well-being outcomes that would have important practical implications for addressing faculty burnout and retention. Examining these broader outcomes would provide a more comprehensive understanding of the value of transparency in digital HR systems.

Fifth, our study did not examine potential moderators of transparency effects. The transparency paradox may be stronger in some contexts or for some individuals than others. For example, transparency may be more important when administrative burden is high, when processes are complex and involve multiple stakeholders, when outcomes are uncertain, when organizational trust is low, or when employees have limited alternative sources of information. Similarly, individual differences in need for control, tolerance for ambiguity, trust propensity, or anxiety sensitivity may moderate transparency effects. Future research should examine these contextual and individual moderators to develop a more nuanced understanding of when and for whom transparency matters most. Such research would provide more precise guidance for when to prioritize transparency over efficiency.

Sixth, while our study focused on transparency, other dimensions of digital employee experience (usability, reliability, responsiveness, empathy, aesthetics) may also be important. Future research should examine the relative importance of these different dimensions and how they interact. For example, transparency may be particularly important when reliability is high (the system consistently provides accurate information), but less important when reliability is low (the system provides inaccurate or inconsistent information). Understanding these interactions would provide more comprehensive guidance for system design and would help organizations make informed decisions about how to allocate limited resources across different system features.

Seventh, our study examined a frugal innovation that prioritized transparency over automation. However, it is possible that systems combining high transparency with high efficiency would generate even higher satisfaction than systems with high transparency but moderate efficiency. Future research should examine whether transparency and efficiency have additive effects (more of both is always better), interactive effects (transparency compensates for moderate efficiency, but efficiency also compensates for moderate transparency), or threshold effects (transparency matters only when efficiency is below a certain threshold). Understanding these relationships would help organizations make informed decisions about how to balance investments in transparency

features versus efficiency features when resources allow for both.

Eighth, our study was conducted in a university context, which has specific characteristics (knowledge workers, complex processes, multiple stakeholders, bureaucratic culture) that may make transparency particularly valuable. Future research should examine whether the transparency paradox holds in other types of organizations with different characteristics. For example, in manufacturing or retail contexts with simpler, more routine HR processes, efficiency may matter more than transparency. Identifying the organizational characteristics that make transparency more or less important would help establish the boundary conditions of our findings.

CONCLUSION

This study investigated the transparency paradox in digital employee experience: why transparency in digital HR systems may be as important as, or even more important than, processing efficiency for employee satisfaction. Drawing on organizational justice theory, organizational support theory, and administrative burden theory, we proposed that transparency enhances satisfaction by fulfilling informational justice needs, signaling organizational support, reducing psychological costs of administrative burden, and acting as a psychological buffer that transforms anxiogenic uncertainty into manageable wait time.

Our findings from a mixed-methods study of a Google Workspace-based international travel approval system at a major Indonesian research university provide robust, converging

support for the transparency paradox. Despite achieving only moderate processing efficiency ($M = 3.806$), the system generated remarkably high employee satisfaction (87% satisfied or highly satisfied), with transparency emerging as the highest-rated dimension ($M = 4.084$) and demonstrating a significantly stronger correlation with satisfaction ($r = 0.687$) than efficiency ($r = 0.524$). Qualitative findings revealed that transparency reduced uncertainty and anxiety, provided a sense of control, signaled organizational respect and support, and enhanced perceived fairness. Critically, respondents explicitly stated that they preferred transparency to speed, providing direct evidence for the paradox.

These findings make several important contributions. Theoretically, we extend organizational justice theory by demonstrating the critical role of informational justice in digital HR service delivery, challenge the efficiency paradigm in digital HRM by showing that transparency may matter more than speed in certain contexts, introduce the concept of transparency as a psychological buffer, and integrate frugal innovation theory with HRM research. Practically, we provide evidence-based guidance for organizations facing resource constraints: prioritize transparency features over expensive automation, as transparency can generate high satisfaction at low cost by addressing employees' fundamental psychological needs for certainty, control, and fairness.

The transparency paradox has important implications for how we think about digital transformation in



HR and beyond. Rather than assuming that “faster is better” or that digital transformation requires expensive enterprise systems, organizations should adopt a user-centered approach that seeks to understand what employees actually need and value. In contexts characterized by high uncertainty, complex processes, significant psychological burden, and bureaucracy-heavy cultures, what employees may need most is not speed, but information, predictability, and a sense of control. Digital systems that provide these psychological benefits through transparency features can significantly enhance employee experience and well-being, even when they do not dramatically improve processing speed.

As organizations worldwide continue to digitalize HR processes, the

REFERENCES

- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- Cadena-Povea, H., Hernández-Martínez, M., Bastidas-Amador, G., & Torres-Andrade, H. (2025). What pushes university professors to burnout? A systematic review of sociodemographic and psychosocial determinants. *International Journal of Environmental Research and Public Health*, 22, 1214. <https://doi.org/10.3390/ijerph22011214>
- Colquitt, J. A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology*, 86(3), 386-400. <https://doi.org/10.1037/0021-9010.86.3.386>
- Colquitt, J. A., Scott, B. A., Rodell, J. B., Long, D. M., Zapata, C. P., Conlon, D. E., & Wesson, M. J. (2013). Justice at the millennium, a decade later: A meta-analytic test of social exchange and affect-based perspectives. *Journal of Applied Psychology*, 98(2), 199-236. <https://doi.org/10.1037/a0031757>
- El Saeed, M., Elgohary, E., & Elbaz, A. M. (2025). The role of HRM-service quality in the relationship between E-HRM and organizational performance. *Future Business Journal*, 11, 5. <https://doi.org/10.1186/s43093-024-00402-x>
- Klimchak, M., Ward Bartlett, A. K., & MacKenzie, W. (2020). Building lessons from this study are timely and important. Digital transformation should not be pursued for its own sake or evaluated solely on efficiency metrics. Rather, it should be guided by a deep understanding of employee needs and evaluated on its ability to enhance employee experience, reduce psychological burden, and signal organizational support. When approached in this user-centered way, even simple, low-cost digital solutions can generate substantial value for employees and organizations alike. The transparency paradox reminds us that in the digital age, knowing may be more valuable than speeding, and that the most effective digital transformations may be those that prioritize human psychological needs over technological sophistication

- trust and commitment through transparency and HR competence: A signaling perspective. *Personnel Review*, 49(8), 1619-1641. <https://doi.org/10.1108/PR-11-2019-0619>
- Menant, L., Gilibert, D., & Sauvezon, C. (2021). The application of acceptance models to human resource information systems: A literature review. *Frontiers in Psychology*, 12, 659421. <https://doi.org/10.3389/fpsyg.2021.659421>
- Moganadas, S. R., & Goh, G. G. G. (2022). Digital employee experience constructs and measurement framework: A review and synthesis. *International Journal of Technology*, 13(5), 1007-1018. <https://doi.org/10.14716/ijtech.v13i5.5547>
- Moore, M. H. (1995). *Creating public value: Strategic management in government*. Harvard University Press.
- Panneerselvam, S., & Balaraman, K. (2022). Employee experience: The new employee value proposition. *Strategic HR Review*, 21(6), 201-207. <https://doi.org/10.1108/SHR-08-2022-0047>
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64(1), 12-40.
- Prabhu, J. (2017). *Frugal innovation: Doing more with less for more*. Philosophical Transactions of the Royal Society A, 375(2095), 20160372. <https://doi.org/10.1098/rsta.2016.0372>
- Rawlins, B. R. (2008). Measuring the relationship between organizational transparency and employee trust. *Public Relations Journal*, 2(2), 1-21.
- Rhoades, L., & Eisenberger, R. (2002). Perceived organizational support: A review of the literature. *Journal of Applied Psychology*, 87(4), 698-714. <https://doi.org/10.1037/0021-9010.87.4.698>
- Stofberg, R., Bussin, M., & Mabaso, C. M. (2023). Pay transparency, job turnover intentions and the mediating role of perceived organizational support and organizational justice. *Employee Relations*, 44(7), 162-182. <https://doi.org/10.1108/ER-02-2022-0077>
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425-478. <https://doi.org/10.2307/30036540>
- Woelert, P. (2023). Administrative burden in higher education institutions: A conceptualisation and a research agenda. *Journal of Higher Education Policy and Management*, 45(3), 290-306. <https://doi.org/10.1080/1360080X.2022.2095773>