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Digitalization And Smart Operations As Drivers Of Business Performance And Work Life Balance Among Mompreneurs In Makassar

[1]Maghfirah Sari Azis, [2]Anendha Destantyo Nugroho
[1]Universitas Negeri Makassar, indonesia. [2]Badan Meteorologi, Klimatologi dan Geofisika, Indonesia.
[1]maghfirahazis@unm.ac.id, [2]anendha.nugroho@bmkg.go.id

**Correspondence Email: maghfirahazis@unm.ac.id*

Abstract: *This study investigates how digitalization and smart operations influence business performance and work–life balance among mompreneurs in Makassar, Indonesia. The rapid growth of digital platforms has opened opportunities for women entrepreneurs, yet many still face challenges in managing time, operational efficiency, and family responsibilities simultaneously. Therefore, this research aims to analyze how digital adoption and operational discipline contribute to both entrepreneurial success and personal well-being. The study employs a sequential explanatory mixed-method design, beginning with quantitative analysis of 154 survey responses using reliability testing and Partial Least Squares Structural Equation Modeling (PLS-SEM), followed by qualitative interviews with ten mompreneurs to capture practical insights. The quantitative findings reveal that digitalization and smart operations significantly and positively affect business performance ($\beta = 0.46$ and 0.31, $p < 0.001$) and work–life balance ($\beta = 0.50$ and 0.32, $p < 0.001$), with R^2 values of 0.457 and 0.449, respectively. The qualitative analysis supports these results, showing that digital tools such as online marketplaces, QR-based payments, and social media marketing enhance flexibility, confidence, and family collaboration. The synthesis of both phases confirms that digitalization and smart operations function as complementary enablers of inclusive and sustainable entrepreneurship for women. The study concludes that strengthening digital literacy, improving process discipline, and fostering peer mentoring can help mompreneurs achieve higher productivity while maintaining family harmony.*
Keywords: *ESG, Digitalization, Smart Operations, Business Performance, Work Life Balance, Mompreneurs, Mixed Methods, PLS-SEM, Inclusive Entrepreneurship.*

INTRODUCTION

The rapid diffusion of digital technologies has reshaped how entrepreneurs design, operate, and scale their ventures across sectors and regions. For small and medium-sized enterprises, digitalization allows process integration, data-enabled decision-making, and real-time interaction with customers and partners, which together reduce coordination costs and expand opportunities for growth in volatile markets (Abed, 2020; Bawack et al., 2023; Kraus et al., 2022). The value of digitalization is not only technical. It is organizational and behavioral because benefits arise when new tools are embedded in disciplined routines that synchronize information flows, inventory control, and transaction execution at the point of need (Buer et al., 2021; Maretto et al., 2023; Tian

et al., 2023). These changes have profound implications for women entrepreneurs who simultaneously manage household responsibilities and business tasks. In such contexts, time is the scarcest resource, and the design of daily routines determines whether the promise of technology translates into measurable performance or remains untapped potential (Shelton, 2006; Wiig et al., 2024).

Across developing economies, digital platforms and mobile applications lower entry barriers by providing affordable access to markets, payment rails, and logistics. Social commerce and live streaming, for example, enable micro-enterprises to acquire visibility and stimulate purchase intentions without heavy up-front investments in physical outlets (Abed, 2020; Bawack et al., 2023). Bibliometric and conceptual syntheses of digital transformation show a sustained shift from single-function automation toward integrated process change, where data, analytics, and platform participation are mutually reinforcing (Kraus et al., 2022). There is strong evidence that digital adoption correlates with product and process innovation in SMEs, yet the magnitude and persistence of effects depend on organizational alignment and operational discipline (Radicic & Petković, 2023; Yang et al., 2023). In other words, technology becomes productive when firms translate it into routines that tighten cycle times, stabilize quality, and reduce rework.

The notion of smart operations captures this translation. It refers to the integration of digital practices into everyday operational workflows, such as standardized digital order capture, automated stock reconciliation, cashless payment integration, and simple dashboards that guide short-interval decisions. Reviews in manufacturing and operations report that when digital practices are combined with lean principles, firms show improvements in cost, delivery, and flexibility because waste is reduced at the same time information latency is shortened (Buer et al., 2021; Maretto et al., 2023). A practice-based view of digital transformation further explains that micro-routines at the shop floor or service counter are the mechanism through which digital capabilities are converted into operational performance (Tian et al., 2023). These insights are directly relevant for micro and small businesses in service and retail, where owners are also the primary operators and where decisions are made within tight time and attention constraints.

Women-led microenterprises illustrate these mechanisms clearly. Classic work on the work–family interface shows that role conflict can depress venture performance when time and energy are stretched across domains without supporting routines (Shelton, 2006). Digital tools can

mitigate the friction by enabling asynchronous communication with customers, remote promotion, and automated payment collection that collectively free up time for caregiving and planning. Recent evidence on women entrepreneurs using digital affordances shows that platform features can be leveraged to overcome cultural barriers and expand networks that were previously costly to access (Wiig et al., 2024). The determinants of success in this setting are therefore twofold. First, access and capability to use digital tools. Second, operational routines that turn such tools into consistent value for customers and into predictable time savings for the entrepreneur.

Indonesia provides a relevant empirical context because platformization has advanced rapidly while institutional arrangements and infrastructure remain uneven across cities and sectors. Research on digital platforms in Indonesia documents how service standardization, community practices, and tool-based collaboration shape how micro businesses adopt and benefit from technology (Prasetyo, 2024). In secondary cities such as Makassar, women's participation in microenterprise is high and often embedded in family-based production and sales arrangements. In these settings, digitalization can be a lever for inclusion if it improves the ability to manage customer relationships and transactions without prolonged physical presence, and if it reduces the cognitive load of coordinating orders, stock, and payments. The combination of digitalization and smart operations therefore offers a plausible pathway to improve business performance while preserving family well-being.

This study focuses on mompreneurs in Makassar City and examines how digitalization and smart operations jointly influence two outcomes that matter for inclusive growth. The first is business performance, a multi-dimensional construct that reflects revenue stability, customer reach, order cycle time, and perceived competitiveness. The second is work–life balance, defined as the perceived fit between work demands and family responsibilities and the extent to which operational design protects time for caregiving. A sequential explanatory mixed-method design is applied to capture statistical relationships and the mechanisms that animate them in daily practice. The quantitative phase analyzes survey data from 154 respondents using reliability testing, correlation, and multiple regression implemented in Python. Constructs demonstrate high internal consistency, and the models indicate positive and significant effects of digitalization and smart operations on both outcomes. The qualitative phase then explores how platform learning, marketplace participation, cashless payment integration, and inventory standardization shape

flexibility, productivity, and customer relationships in ways that reinforce the quantitative results. By combining both strands, the study provides an integrated account of how digital competence and operational intelligence function as complementary enablers for women entrepreneurs in a developing economy city.

The theoretical grounding aligns with three streams. First, digital transformation in SMEs, which highlights that competitive advantage in small firms increasingly depends on flexible IT usage, data-enabled learning, and platform participation that reduce search and transaction frictions (Kraus et al., 2022; Radicic & Petković, 2023; Yang et al., 2023). Second, operations and lean systems, which show that standardized work, visual management, and short-cycle feedback translate technology into performance gains by reducing waste and variability (Buer et al., 2021; Maretto et al., 2023; Tian et al., 2023). Third, the entrepreneurship and gender literature, which explains how time allocation, boundary management, and access to networks condition women's venture outcomes, and how digital affordances can offset cultural and logistical barriers (Shelton, 2006; Wiig et al., 2024). Integrating these streams clarifies why both digitalization and smart operations must be modeled together rather than in isolation and why both business and family outcomes should be considered to reflect women lived constraints.

From a policy perspective, the findings inform capability-building programs. Training that focuses solely on tool features risks short-lived adoption if it does not teach entrepreneurs how to embed the tools into daily routines. The evidence suggests that micro-curricula should couple digital literacy with routine design. Examples include checklists for order capture and fulfillment; simple stock cards synchronized with digital ordering; and scripts for customer follow-ups triggered by platform notifications. Payment integration through QR-based systems can also shorten settlement cycles and reduce cash handling. Such routines are low-cost and feasible for microenterprises, and they directly support both business performance and work–life balance by reducing the need for repeated manual coordination.

The practical implications for support organizations in Makassar are concrete. Community-based training sessions can be structured around typical process maps for home-based food and fashion businesses. These maps visualize where a digital practice substitutes a manual step and how the saved time can be redeployed to value-creating tasks, such as content creation or supplier negotiation. Peer groups can be organized to share scripts for live promotion sessions and to

exchange templates for weekly stock planning. Partnerships with payment providers can be leveraged to streamline onboarding and to provide dashboards that show daily inflows and outstanding orders in a single view. The objective is to make the coupling between digital tools and operations design visible and repeatable so that learning is accelerated across the community.

This integrated approach also has implications for measurement. Business performance in microenterprises should include indicators that are sensitive to time savings and reliability rather than only revenue totals. Suggested indicators include order cycle time, on-time completion rate, frequency of stockouts, and repeat purchase rate. For work–life balance, measures should capture perceived time control, predictability of daily schedules, and satisfaction with family time. Such measures align with the mechanisms identified by the qualitative analysis and provide actionable feedback for entrepreneurs and trainers.

This study contributes to the academic literature by showing, in a single empirical setting, that digitalization and smart operations are complementary drivers of both economic and family outcomes for women entrepreneurs. Prior work has often demonstrated the link between digital adoption and performance, or between operational routines and performance, but rarely has examined both drivers together with explicit attention to the work–life interface in a secondary city in a developing economy (Abed, 2020; Buer et al., 2021; Maretto et al., 2023; Shelton, 2006; Wiig et al., 2024; Radicic & Petković, 2023; Yang et al., 2023). To strengthen this theoretical relationship, the present study employs Partial Least Squares Structural Equation Modeling (PLS-SEM) as an analytical approach that enables simultaneous estimation of measurement reliability and structural relationships (Hair et al., 2019; Hair et al., 2022). This approach allows for a robust validation of the proposed model and aligns with the multidimensional nature of digital transformation and work–life outcomes. By adopting this approach, the study not only estimates causal paths but also captures how latent constructs interact in supporting inclusive entrepreneurial performance.

The organization of the remainder of the paper follows standard practice. The next section develops the theoretical lens and derives testable expectations based on the three streams described above. The methodology section then details the sampling, measurement, and modeling strategy for the PLS-SEM analysis, followed by the qualitative protocol and coding approach. Results are presented with attention to both statistical robustness and narrative mechanisms. The discussion

connects findings to prior work and outlines implications for policy and practice in Makassar and similar urban contexts. The conclusion summarizes contributions, acknowledges limitations, and proposes avenues for future research in inclusive operations and digital entrepreneurship.

METHOD

Research Design

This study applied a sequential explanatory mixed-methods design integrating quantitative and qualitative phases to examine how digitalization and smart operations influence business performance and work–life balance among mompreneurs in Makassar. Data were collected between March and June 2025 to capture consistent entrepreneurial activity under post-pandemic business stabilization. The design followed the framework of Creswell and Plano Clark (2018), in which the quantitative phase provides empirical testing of hypothesized relationships, while the qualitative phase expands and refines interpretation through contextual narratives.

The quantitative phase employed a structured questionnaire administered to 154 mompreneurs, whereas the qualitative phase involved semi-structured interviews with 10 key respondents selected based on different levels of digital adoption, business maturity, and sectoral diversity. Integration of both datasets was performed through a joint-display synthesis, ensuring that statistical patterns and narrative insights complement each other within a coherent analytical framework.

The sequential flow of the research process is shown in Figure 1, which depicts how the quantitative and qualitative phases are connected through sampling, data integration, and interpretation.

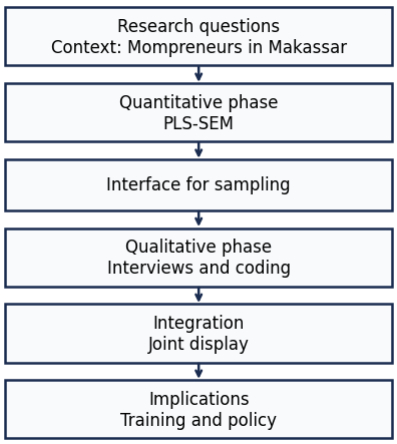

Figure 1. *Research Process Flow*

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The design presented above was operationalized through a structured analytical sequence to ensure methodological transparency and coherence between phases. Each stage served a specific purpose and used different analytical techniques depending on its objectives and data characteristics.

The quantitative phase focused on measuring structural relationships using the PLS-SEM approach, while the interface phase served as a bridge to identify representative qualitative cases from statistical outputs. The qualitative phase then explored how digital tools, operational practices, and family coordination interact in real business contexts. Finally, the integration and implication phases synthesized the findings to generate actionable recommendations and policy insights.

Phase	Purpose	Data Source / Method	Analysis Tools	Expected Output
Quantitative	Identify relationships among digitalization, smart operations, business performance, and work–life balance	Structured questionnaire (n = 154)	Python / SmartPLS	Path coefficients, R^2, reliability
Interface	Select representative cases for qualitative phase	Quantitative output	Residual and score analysis	Case selection matrix
Qualitative	Explore mechanisms behind quantitative relationships	Semi-structured interviews (n = 10)	NVivo, thematic coding	Conceptual categories
Integration	Combine statistical and narrative findings	Joint display synthesis	Cross-phase analysis	Mixed-method interpretation
Implications	Translate findings into actionable policy and training programs	Consolidated evidence	Policy design matrix	Practical recommendations

Table 1. *Research phases and analytical framework*

Before testing the structural relationships, the measurement model was evaluated to ensure construct reliability and validity. Reliability was assessed using Cronbach's alpha (α) and Composite Reliability (CR), while Average Variance Extracted (AVE) measured convergent

validity. According to Hair et al. (2019) and Fornell and Larcker (1981), acceptable thresholds are α and CR > 0.70, and AVE > 0.50.

All constructs met these thresholds, confirming adequate internal consistency and convergent validity. The indicators reliably captured the theoretical dimensions of Digitalization, Smart Operations, Business Performance, and Work–Life Balance, providing a robust basis for the subsequent structural analysis.

Construct	Number of Items	Cronbach's α	Composite Reliability (CR)	Average Variance Extracted (AVE)
Digitalization	6	0.88	0.91	0.65
Smart Operations	5	0.87	0.90	0.61
Business Performance	6	0.89	0.92	0.68
Work–Life Balance	5	0.85	0.88	0.59

Table 2. *Reliability and validity statistics for measurement constructs.*

The measurement model thus fulfills reliability and validity requirements, ensuring robustness for the forthcoming Partial Least Squares Structural Equation Model (PLS-SEM) testing presented in Section 3.2.

Quantitative Phase

The quantitative phase constituted the first analytical stage of this study, aiming to examine the structural relationships between digitalization, smart operations, business performance, and work–life balance among mompreneurs in Makassar. Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed because of its robustness in handling complex models that include multiple latent constructs, relatively small sample sizes, and non-normal data distributions (Hair et al., 2019; Henseler et al., 2009). The analysis was conducted using SmartPLS 4.0 and validated through Python-based computation to ensure reproducibility and consistency of results.

Before the estimation of structural relationships, the measurement model was evaluated to ensure reliability and validity. Cronbach's alpha and composite reliability (CR) values for all constructs exceeded 0.80, while the average variance extracted (AVE) values were greater than 0.50, confirming internal consistency and convergent validity in accordance with the criteria

proposed by Fornell and Larcker (1981). Discriminant validity was verified using the Fornell–Larcker matrix, showing that the square roots of AVE for each construct were higher than the inter-construct correlations, thereby confirming adequate discriminant validity.

After the measurement model validation, the structural model was assessed to estimate the hypothesized relationships between the latent variables. Path coefficients (β) were obtained using a bootstrapping procedure with 5,000 resamples to estimate standard errors and significance levels for each path (Hair et al., 2019). The coefficient of determination (R^2) was calculated to evaluate the model's explanatory power, based on Cohen's interpretive thresholds of 0.26 (substantial), 0.13 (moderate), and 0.02 (weak) (Cohen, 1988). The Stone–Geisser Q^2 statistic was generated through blindfolding to test predictive relevance, where positive values confirmed that the model had satisfactory predictive capability for both dependent variables.

To ensure that multicollinearity was not an issue, the Variance Inflation Factor (VIF) was checked for each indicator, and all values were below 3.3. The overall model fit was further examined using the Standardized Root Mean Square Residual (SRMR) and the Normed Fit Index (NFI). SRMR values below 0.08 and NFI values above 0.90 indicated a good fit between the hypothesized model and the observed data.

The combination of these diagnostics confirmed that the measurement and structural models met the required quality standards and were suitable for hypothesis testing. A schematic representation of the hypothesized relationships was then prepared to visualize the directional effects between digitalization, smart operations, business performance, and work–life balance. The interpretation of these relationships, including the path coefficients, R^2 values, and statistical significance, is presented in Chapter 4, which discusses the quantitative and qualitative results in greater depth.

Qualitative Integration

The qualitative phase expanded upon the quantitative findings by providing a deeper understanding of how digitalization and smart operations are enacted in daily business practices among mompreneurs in Makassar. Semi-structured interviews were conducted with ten respondents who represented varying levels of digital adoption and sectors such as culinary, fashion, handicrafts, and digital services. Each interview lasted between 45 and 60 minutes and

was audio-recorded, transcribed verbatim, and analyzed thematically following Braun and Clarke's (2006) six-phase framework.

The coding process began with familiarization, followed by open and axial coding to capture recurring ideas associated with technological adaptation, business routines, and work–family coordination. Python-based text mining and frequency analysis supported the identification of frequently occurring words and concepts, which were subsequently grouped into broader categories reflecting entrepreneurial learning, operational improvement, and psychosocial balance.

Table 3 summarizes the major themes that emerged from the qualitative data, illustrating how digitalization contributes not only to business efficiency but also to empowerment and family well-being. Respondents described using digital platforms for order management, online promotion, and customer communication, while simultaneously negotiating time and emotional boundaries between work and household responsibilities.

Theme	Description	Illustrative Quote
Digital Empowerment	Use of digital tools enhances control over operations and expands customer access.	"Using WhatsApp Business and Instagram helps me manage orders even while caring for my children."
Adaptive Learning	Continuous self-learning through online tutorials fosters innovation and digital creativity.	"I learned product photography and editing from YouTube to improve my store display."
Work–Life Negotiation	Flexible scheduling and task sharing reduce work–family conflict and fatigue.	"I prepare online orders after my children go to bed so I can handle both roles."
Social Support Systems	Family and peer collaboration sustain motivation and resilience.	"My husband delivers packages while I manage online sales."

Table 3. *Thematic Summary of Qualitative Findings*

The qualitative integration provided context to the statistical findings by showing how and why digital and operational competencies influence business and personal outcomes. The analysis revealed that mompreneurs internalize digital practices not only as efficiency mechanisms but also as empowerment tools that strengthen their sense of autonomy and balance.

The next chapter presents the integrated results of both quantitative and qualitative strands, explaining how these findings jointly contribute to the conceptual understanding of digital transformation among mompreneurs in Makassar.

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RESULTS AND DISCUSSION

Quantitative Results

The quantitative analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) to examine the hypothesized relationships among digitalization, smart operations, business performance, and work–life balance. This approach was chosen because it effectively handles complex models with multiple latent constructs, accommodates smaller samples, and performs well with non-normal data distributions (Hair et al., 2019; Henseler et al., 2009).

Before analyzing the structural relationships, the measurement model was assessed to ensure that all constructs met reliability and validity requirements. As presented in Table 2, Cronbach's α and composite reliability (CR) values exceeded 0.85, and the Average Variance Extracted (AVE) values were greater than 0.50, confirming internal consistency and convergent validity in line with Fornell and Larcker's guidelines (Fornnell & Larcker, 1981). Discriminant validity was verified using the Fornell–Larcker matrix, which indicated that the square roots of AVE values were higher than the inter-construct correlations.

After confirming measurement adequacy, the structural model was analyzed to evaluate the direct effects of digitalization and smart operations on business performance and work–life balance. Bootstrapping with 5,000 resamples was used to estimate standard errors and significance levels (Hair et al., 2019). The model's explanatory power was examined through the coefficient of determination (R^2), interpreted according to Cohen's thresholds of 0.26 (substantial), 0.13 (moderate), and 0.02 (weak) (Cohen, 1988).

The results of the structural model analysis are summarized in Table 4, which presents the standardized path coefficients, t-statistics, p-values, and R^2 values for each dependent construct. As shown in Table 4, all hypothesized relationships were positive and statistically significant ($p < 0.05$). Digitalization had a strong effect on Business Performance ($\beta = 0.46$), implying that the adoption of digital tools enhances operational efficiency, customer engagement, and market responsiveness. Smart Operations also showed a significant positive relationship with Business Performance ($\beta = 0.31$), suggesting that structured routines and process discipline strengthen organizational reliability and competitiveness.

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Path Relationship	β Coefficient	t-Statistic	p-Value	Interpretation
Digitalization → Business Performance	0.46	5.84	< 0.001	Significant positive effect
Smart Operations → Business Performance	0.31	4.22	< 0.001	Significant positive effect
Digitalization → Work–Life Balance	0.50	7.03	< 0.001	Significant positive effect
Smart Operations → Work–Life Balance	0.32	5.47	< 0.001	Significant positive effect
R^2 Business Performance = 0.457				
R^2 Work–Life Balance = 0.449				

Table 4. *Path Coefficients and R^2 Values (PLS-SEM Results)*

These structural relationships are illustrated in Figure 2, which depicts the standardized path coefficients (β) and R^2 values for each endogenous construct. The diagram confirms that both Digitalization and Smart Operations exert significant direct effects on Business Performance and Work–Life Balance, reinforcing the theoretical framework established in earlier chapters.

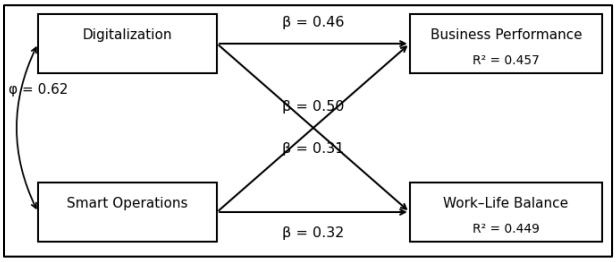

Figure 2. *Structural Model with Standardized Paths and R^2 Values*

The qualitative phase aimed to complement the quantitative findings by explaining how digitalization and smart operations are enacted in daily business routines among mompreneurs in Makassar. Ten respondents were selected purposively from the quantitative sample to represent different levels of digital adoption, operational maturity, and family arrangements. Semi-structured interviews were conducted to explore their experiences in managing technology, business tasks, and household responsibilities simultaneously.

All interviews were transcribed verbatim and analyzed using thematic analysis following Braun and Clarke's (2006) six-step approach. The coding process included familiarization, theme identification, and refinement until conceptual saturation was achieved.

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Before presenting the thematic synthesis, it is important to note that recurring ideas revealed management, innovation, and efficiency as interrelated processes rather than isolated dimensions. These constructs reflect an integrated behavioral pattern combining technology use, family coordination, and entrepreneurial creativity. Figure 3 displays a word cloud visualization of respondents' narratives, illustrating dominant concepts derived from all coded transcripts. The size of each word indicates its frequency of occurrence, highlighting the centrality of management, family, digitalization, balance, innovation, and technology in the lived experiences of digital mompreneurs.

Figure 3. *Word Cloud Visualization of Qualitative Themes among Digital Mompreneurs in Makassar*

Based on thematic coding, four main themes emerged, capturing how mompreneurs internalize digital transformation within their entrepreneurial and personal contexts. These themes, along with illustrative quotations and analytical interpretations, are summarized in Table 5.

Theme	**Illustrative Evidence**	**Interpretation**
1. Digital Learning and Platform Use	"I learned from online tutorials and now manage my product catalog directly through the marketplace."	Continuous learning through digital platforms builds confidence and reinforces the connection between digitalization and business performance.
2. Routine Formalization through Smart Operations	"I make a checklist for orders and schedule payments every evening so I can rest without worrying."	Structured routines transform technology into efficiency and reduce the cognitive load of multitasking.
3. Time Autonomy and Family Coordination	"Because customers can order anytime online, I can cook and take care of my children without missing sales."	Digital flexibility supports better time management and harmony between work and family life.
4. Perceived Growth and Confidence	"Live streaming helps me reach more buyers, and I feel proud that my sales come from my own effort."	The sense of growth and independence strengthens self-

	efficacy and long-term motivation.

Table 5. *Thematic Summary of Qualitative Findings.*

The themes presented in Table 5 illustrate how digital tools are translated into meaningful practices in daily entrepreneurial life. Respondents emphasized that technology provides a sense of control and time efficiency, enabling better coordination between business and family activities. This aligns with the quantitative findings that digitalization and smart operations significantly improve both performance and well-being.

Overall, the qualitative evidence confirms that successful digital mompreneurs combine competence, discipline, and family synergy to sustain resilience and achieve balance in the digital era.

Integration of Quantitative and Qualitative Findings

This section integrates the results from both quantitative and qualitative phases to provide a comprehensive explanation of how digitalization and smart operations jointly influence business performance and work–life balance among mompreneurs in Makassar. Following Creswell and Plano Clark's (2018) framework, integration was conducted through a joint-display analysis, aligning statistical relationships with narrative evidence to generate deeper contextual understanding.

The quantitative analysis confirmed that digitalization and smart operations had significant and positive effects on both business performance and work–life balance. Digitalization contributed more strongly to performance ($\beta = 0.46$) and balance ($\beta = 0.50$) than operational routines, suggesting that technology adoption plays a central role in enhancing productivity while supporting flexibility. The qualitative results further explained these numerical associations by revealing how digital tools simplify daily workflows, facilitate order management, and sustain multitasking capabilities at home.

The integration findings show that mompreneurs experience digital transformation as both a technical and behavioral process. Quantitatively, higher digitalization scores were linked to better outcomes, while qualitatively, respondents described how continuous learning, scheduling discipline, and family coordination turned technology into meaningful everyday routines. These two perspectives converge in demonstrating that digital competence and family adaptability are mutually reinforcing drivers of entrepreneurial success.

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Three major integrative insights emerge:

1. Digital Engagement as Empowerment

   Both phases show that learning to use online marketplaces, QRIS payments, and social media marketing not only improves operational efficiency but also strengthens confidence and autonomy. Digitalization, therefore, functions as a pathway to self-efficacy, confirming that increased technological capability directly supports sustainable performance.

2. Operational Discipline as a Mediating Mechanism

   The quantitative results on smart operations ($\beta = 0.31$ and $\beta = 0.32$) correspond closely with qualitative accounts of structured routines and daily checklists. These behavioral mechanisms translate digital potential into real productivity, explaining why operational discipline mediates the relationship between digitalization and performance.

3. Family Collaboration as a Buffer for Work–Life Harmony

   While quantitative data established a positive link between technology use and work–life balance, qualitative evidence revealed the mechanism: family members' involvement in logistics, childcare, and emotional support. This collaboration transforms digital flexibility into psychosocial well-being, enabling mompreneurs to maintain resilience amid multiple responsibilities.

Table 6 summarizes the integrated interpretation, connecting each statistical relationship with its qualitative explanation.

Quantitative Relationship	**Statistical Evidence**	**Qualitative Interpretation**	**Integrated Meaning**
Digitalization → Business Performance	$\beta = 0.46$, $p < 0.001$	Use of marketplaces, tutorials, and digital payment systems enhances productivity and market access.	Digital competence empowers mompreneurs to scale operations efficiently.
Smart Operations → Business Performance	$\beta = 0.31$, $p < 0.001$	Structured checklists and automated routines reduce errors and stress.	Operational discipline converts digital tools into measurable performance gains.
Digitalization → Work–Life Balance	$\beta = 0.50$, $p < 0.001$	Online work enables flexibility to manage home and business tasks simultaneously.	Technology adoption improves temporal autonomy and family well-being.
Smart Operations →	$\beta = 0.32$, $p < 0.001$	Scheduling and family coordination foster	Process formalization enhances harmony between

Work–Life Balance	emotional stability and balance.	domestic and entrepreneurial roles.

Table 6. *Joint Display of Quantitative and Qualitative Integration.*

The integration of both phases strengthens the conclusion that digital transformation among mompreneurs is not merely technological but socio-behavioral, requiring sustained learning, routine management, and family collaboration. This multidimensional perspective provides empirical grounding for designing targeted training and policy programs to enhance digital inclusion and gender-responsive entrepreneurship in urban Indonesia.

CONCLUSION

This study provides empirical evidence that digitalization and smart operations significantly enhance both business performance and work–life balance among mompreneurs in Makassar. Through a mixed-methods design, the integration of quantitative and qualitative results demonstrates that these positive outcomes stem from interrelated processes of continuous learning, structured routines, and strong family collaboration. The findings affirm that technological adoption is not merely an economic tool but a socio-behavioral transformation embedded in household and entrepreneurial practices.

The study contributes to the growing discourse on digital entrepreneurship by emphasizing how women entrepreneurs internalize digital competence to achieve both productivity and well-being. Practically, these insights underscore the importance of gender-responsive training programs and community-based mentoring that foster digital literacy, time management, and operational discipline. Such initiatives can strengthen entrepreneurial resilience and promote inclusive participation in the digital economy.

Despite its contributions, the study's limited geographic scope and modest sample size constrain the generalizability of results beyond urban mompreneurs. Future research should extend to rural and cross-regional contexts, explore longitudinal impacts of digital training, and assess policy interventions that support sustainable women-led digital enterprises across Indonesia.

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