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DECISION SUPPORT SYSTEM SUCCESS AND OPERATIONS SUSTAINABILITY: MODERATING ROLE OF SUPPLY CHAIN RESILIENCE

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Research Paper

Abstract: *The objective of this research was to examine the influence of decision support system (DSS) success on the operational sustainability of the service industry in Saudi Arabia. Additionally, the study investigated the moderating effect of supply chain resilience on this relationship. Data were collected via a self-administered survey from 320 employees in the Saudi Arabian service sector, utilizing a convenience sampling technique. The research adopted a cross-sectional design and a deductive quantitative approach. Data were analysed using SPSS and SmartPLS-4. The regression analysis revealed that both operational information systems and operational system quality have a positive and significant impact on net benefits, mediated by product quality and decision support satisfaction. Operational service quality demonstrated a significant positive impact on net benefits through the mediation of product quality but had an insignificant impact when mediated by decision support satisfaction. Furthermore, product quality exhibited a positive and significant impact on decision support satisfaction. Net benefits were also found to have a positive and significant impact on operational sustainability. Supply chain resilience was identified as a significant moderator between net benefits and operational sustainability. This study, through its mediated-moderated model, contributes to the existing body of literature and opens new avenues for future research. It also provides practical insights for service industry practitioners aiming to enhance sustainability in Saudi Arabia and beyond.*

Keywords: *Decision Supports System, Operations Sustainability, Service Industry, Saudi Arabia.*

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1. Introduction

In the current dynamic economy, the service industry plays a crucial role in enhancing economic growth and meeting customer needs (Mariani & Borghi, 2023). The service sector encompasses a diverse range of businesses, making the sustainability of operations within this industry essential. Ensuring sustainable operations not only boosts organizational competitiveness but also enhances long-term economic, environmental, and social benefits (Lizarelli et al., 2023). Sustainable operations in the service sector involve balancing economic efficiency with environmental responsibility and social equity, thereby contributing to societal wellbeing and the prosperity of future generations (Obeidat et al., 2023). Given this significance, research in this area is imperative. Several factors influence the sustainability of service operations, with decision support system (DSS) success factors such as information quality, system quality, and service quality being particularly impactful (Tint, 2023). Studies suggest that these factors are more effective when mediated by other variables (Tint, 2023; Utomo et al., 2023). Thus, it can be argued that achieving various benefits enhances organizational sustainability (Alshibly, 2015). Furthermore, new organizational benefits are attainable only when companies maintain robust supply chain resilience (Wong et al., 2020).

Previous studies have increasingly emphasized the importance of sustainability, validating theoretical frameworks and providing various context-specific insights important for understanding endogenous factors (Agung, 2020; Nyinawimfura, 2013). However, these studies have given little attention to the practical aspects of sustainability. Moreover, empirical research on operational sustainability within the service industry, particularly in the context of Saudi Arabia, remains limited. This scarcity of research hampers the development of evidence-based strategies to enhance sustainability in Saudi Arabian service operations due to the limited applicability of findings. This gap highlights the necessity for empirical studies focused on the Saudi Arabian service sector. Additionally, previous research has produced inconsistent findings regarding the direct effects of factors such as operational information quality, system quality, service quality, and product quality on operational sustainability, further emphasizing the need for empirical investigation in this domain (Alshibly, 2015; Jo & Park, 2023; Tint, 2023; Yang et al., 2023). Furthermore, much of the existing research has been conducted in contexts outside of Saudi Arabia, overlooking the unique characteristics of the Saudi service industry.

Moreover, various operational factors not only directly impact sustainability but also interact with other effects, reinforcing an interconnected approach that enhances sustainability while fostering agility and adaptability in response to dynamic environmental and market conditions. Despite this, little attention has been paid to the mediating effects of variables such as decision support satisfaction on the relationship between operational quality and net profits in the Saudi Arabian service industry. Understanding these mediation effects is essential for uncovering the underlying mechanisms through which operational quality influences sustainability (Ifedi et al., 2024; Judijanto et al., 2023). Several studies have argued that the impacts of information quality, service quality, and system quality on sustainability could be further explored through other mediating variables (Ifedi et al., 2024; Mujianto et al., 2023). Therefore, this research focuses on the mediating effects of product quality and decision support systems to enhance sustainability. As previously discussed, prior

studies have reported mixed findings. Limited exploration has been conducted on the moderating effect, particularly in the context of supply chain resilience, on the relationship between net benefits and operational sustainability in the Saudi Arabian service industry. Given the increasing complexity and volatility of supply chains, understanding how resilience moderates this relationship is crucial for enhancing an organization's long-term sustainability (Manurung et al., 2023; Munim et al., 2023). This research addresses these gaps in the existing literature by empirically investigating the impact of various decision support system successes on the operational sustainability of the service sector in Saudi Arabia. The study also examines the moderating influence of supply chain resilience on the relationship between net benefits and operational sustainability in the Saudi Arabian service industry.

This research, with its specific objectives, bridges gaps in the extant literature by empirically testing the effects of decision support system success factors on operational sustainability within Saudi Arabia's service sector. By elucidating these associations, the study offers valuable insights for organizations aiming to enhance their sustainability initiatives. Furthermore, the investigation into the moderating effect of supply chain resilience provides a new understanding of how organizational resilience interacts with decision support systems to shape sustainability outcomes. These findings not only enrich the academic field but also offer actionable guidance for practitioners seeking to optimize their operational practices in a rapidly evolving business environment.

Ultimately, this research represents an important step towards enhancing sustainable development and resilience within Saudi Arabia's service industry. Additionally, it provides practical insights for service industry practitioners aiming to improve sustainability both within Saudi Arabia and beyond. The study is organized into four chapters: the literature review, which covers both theoretical and empirical perspectives; the research methods, which detail the research design and data collection procedures; the data analysis, which includes both descriptive and inferential perspectives; and the discussion section, which interprets the study results and supports them with relevant studies.

2. Literature Review and Hypothesis Development

2.1 Theoretical Framework Development

The success of DSS often relies on the information system success models proposed by (DeLone & McLean, 1992, 2003). These models highlight the importance of information system quality, which includes both system quality and information quality (DeLone & McLean, 1992, 2003). User satisfaction, a key indicator of IS success, is influenced by both system and information quality, emphasizing the role of user involvement in achieving positive outcomes(DeLone & McLean, 1992). Previous research acknowledged user satisfaction as a measure of information success, but its definition became clearer with DeLone and McLean's distinction between information and system quality in 1992. This study shifts the focus from user satisfaction to decision support satisfaction, reflecting the system's effectiveness in aiding decision-

making processes (DeLone & McLean, 2003). Understanding the relationship between these variables and decision support satisfaction provides insights that align with prior research on predicting user acceptance and usage behaviour (Venkatesh et al., 2003).

The updated information success model of 2003 introduces the concept of net benefits, which replaces individual and organizational impacts. Net benefits encompass the tangible advantages users gain from decision support satisfaction, including both individual and organizational impacts. The definition of net benefits must be contextualized within the specific system and the perspective of those evaluating its impact, as this significantly affects what constitutes IS success (DeLone & McLean, 2003). Based on this discussion, the researcher has formulated the conceptual framework shown in Figure 1.

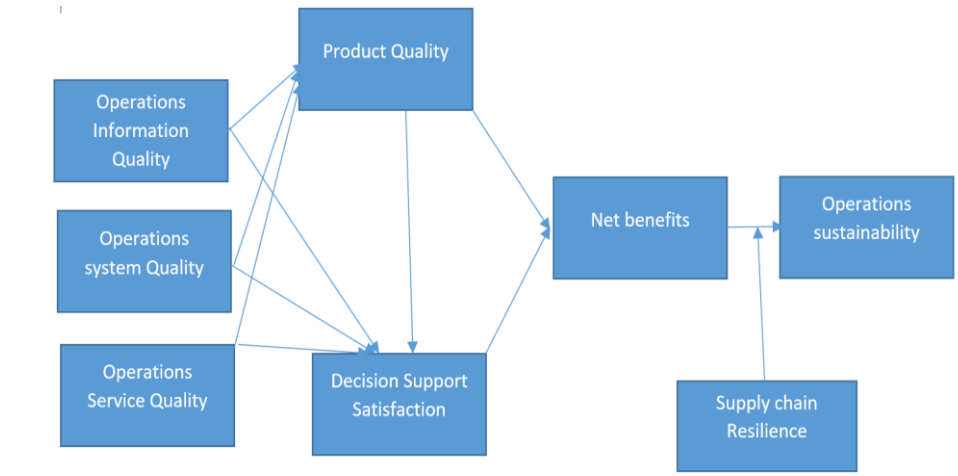

Figure 1: Conceptual Framework

2.2. Research Hypothesis

The quality of information within operations management systems is crucial for effective decision-making and performance improvement (Pramudito et al., 2023). High-quality information provides better insights into processes, thereby enhancing product quality (Rashid & Rasheed, 2024). Product quality is a key determinant of customer satisfaction and loyalty (Afful-Dadzie et al., 2023). High-quality products are more likely to meet customer expectations and generate positive word-of-mouth, leading to increased sales and profits (Wowling et al., 2024). Empirical evidence suggests a significant association between information quality and quality management (Gunawan, 2022). Another study found that organizations focusing on improving their information quality can enhance product quality, leading to increased net benefits and organizational sustainability (Gunawan, 2022). Based on this discussion, the study has formulated the following research hypotheses,

H1: *Operations information quality has significant influence on net profits through product quality.*

Furthermore, system quality refers to the efficiency, reliability, and effectiveness of an organization's systems and processes. High-quality systems are characterized by streamlined processes and increased flexibility (Knauer et al., 2020). These systems play a crucial role in ensuring consistency and standardization in production, which are essential for maintaining product quality (Knauer et al., 2020). Product quality is a fundamental aspect of competitive advantage for organizations (Alzoubi et al., 2022). Organizations that prioritize product quality often achieve higher levels of customer loyalty and market share. By improving operational system quality, organizations can enhance their ability to deliver high-quality products consistently, leading to increased customer satisfaction (Mahsyar & Surapati, 2020) and, consequently, higher net profits. Therefore, the study has formulated the following research hypotheses,

H2: *Operations system quality has significant influence on net profits through product quality.*

Furthermore, operations service quality denotes the standard of service rendered throughout the operational process, encompassing pre-sale, during sale, and post-sale interactions. It includes attributes such as responsiveness, reliability, assurance, empathy, and tangibles (Nguyen et al., 2020). Exceptional service quality in operations can lead to heightened customer satisfaction and favourable word-of-mouth (Berry et al., 2002). Product quality is pivotal in shaping customer satisfaction and loyalty (Gogoi, 2020). Favourable experiences with high-quality products often result in repeat purchases and positive referrals, thereby boosting sales and profitability (Guajardo et al., 2016). Considering these insights collectively, it can be posited that operations service quality influences customer perceptions of product quality, subsequently impacting net profits. Therefore, the following hypothesis is formulated,

H3: *Operations service quality has significant influence on net profits through product quality.*

Operations information quality is also crucial for satisfaction (Amin & Chandra, 2022). High-quality information empowers managers to make well-informed decisions, consequently enhancing satisfaction (Lin et al., 2023). Information systems serve a critical function in gathering, processing, and disseminating information across diverse functional areas (Lin et al., 2023). Moreover, decision support systems assist managers in analysing intricate data and making strategic decisions (Garcia et al., 2024). Satisfaction with decision support systems is influenced by factors such as system usability and perceived usefulness (Garcia et al., 2024). When decision-makers perceive the information provided by operations systems as accurate, relevant, and timely, they are more likely to be satisfied with the decision support process (Garcia et al., 2024). Therefore, the study has formulated the following research hypothesis,

H4: *Operations information quality has significant influence on net profits through decision support satisfaction.*

Moreover, system quality encompasses the effectiveness, reliability, and flexibility of systems and processes within an organization (Luu Thi Thuy et al., 2024). Enhanced quality of operations systems within the organization streamlines processes, reduces errors, and contributes to the firm's sustainability (Ayinaddis et al., 2023). Additionally, decision support systems aid managers in data analysis and informed decision-making (Setiadi et al., 2023). Satisfaction with decision support systems is

influenced by factors such as system usability, information quality, and perceived usefulness (Anand et al., 2023). When operations systems exhibit high quality, decision support systems are more likely to furnish relevant and reliable information, thereby fostering greater satisfaction among decision-makers (Prasetyo et al., 2023).

Drawing upon previous studies, it can be argued that higher quality operations systems lead to increased decision support satisfaction, which subsequently has a positive impact on net profits. Therefore, the study formulates the following research hypothesis,

H5: *Operations system quality has significant influence on net profits through decision support satisfaction.*

On the contrary, operations service quality pertains to the service provider's performance levels throughout the operational process, encompassing pre-sale, during sale, and post-sale interactions (Venkatakrishnan et al., 2023). High-quality operations service incorporates attributes such as responsiveness, reliability, assurance, empathy, and tangibles (Aripin et al., 2023). Exceptional service quality in operations contributes to heightened customer satisfaction, loyalty, and positive word-of-mouth, which in turn can enhance decision support satisfaction as customers perceive the service quality provided by operations as reflective of the organization's overall competency. Decision support systems aid managers in analysing data and making informed decisions (Ilham et al., 2023). Satisfaction with decision support systems is influenced by factors such as system usability, information quality, and perceived usefulness (Ilham et al., 2023). These previous studies underscore that higher operations service quality could lead to greater decision support satisfaction, which subsequently positively impacts net profits. Therefore, the following research hypothesis is formulated,

H6: *Operations service quality has significant influence on net profits through decision support satisfaction.*

Moreover, product quality emerges as a pivotal factor in consumer decision-making and satisfaction (Rajasa et al., 2023). High-quality products meet or surpass customer expectations in terms of performance, reliability, and aesthetics (Cahaya et al., 2023). Favourable experiences with high-quality products can result in repeat purchases, positive word-of-mouth, and heightened customer loyalty (Cahaya et al., 2023). Furthermore, product quality shapes the perceived value of a product, influencing customer satisfaction and purchase intentions (Munawaroh & Simon, 2023).

Additionally, decision support systems aid managers in data analysis and informed decision-making (Shim et al., 2002). Satisfaction with decision support systems is influenced by factors such as system usability, information quality, and perceived usefulness (Arif et al., 2023). When decision-makers perceive the products offered by the organization as high quality, it can positively impact their satisfaction with decision support systems, as they may have greater confidence in the data and insights provided by these systems (Arif et al., 2023). Drawing upon previous studies, the following research hypotheses are formulated,

H7: *Product quality has significant impact on decisions support satisfaction.*

The concept of net benefits, often associated with financial gains or returns, plays a pivotal role in determining organizational sustainability (Ekins & Zenghelis, 2021). Organizations that attain higher net benefits are better positioned to allocate resources towards sustainable practices (Manchaiah et al., 2021). Net benefits encompass both monetary gains and non-financial advantages such as enhanced reputation and stakeholder satisfaction, all of which contribute to sustainability. The attainment of net benefits empowers organizations to invest in sustainable initiatives.

In another study, it is also posited that net benefits can enhance the sustainability of organizations (Muñoz et al., 2023). This assertion is further corroborated by relevant research indicating a positive and significant association between net benefits and sustainability. Therefore, the study formulates the following research hypothesis,

H8: *Net benefits has significant impact on operations sustainability*.

Supply chain resilience is akin to a fortress fortifying against disruptions, ensuring the smooth flow of operations despite challenges (Negri et al., 2021). Picture a web of interconnected nodes, each bolstered with flexibility, redundancy, collaboration, and adept risk management practices, forming the backbone of resilient supply chains (Negri et al., 2021). These chains possess the elasticity to bend with the winds of change, the foresight to anticipate threats, and the resilience to bounce back from setbacks. Consider how net benefits act as a nourishing stream, replenishing the reservoirs of organizational sustainability (Sabouhi et al., 2021). Sustainable operations, akin to a well-tended garden, nurture environmental stewardship, optimize resource usage, and cultivate fruitful relationships with stakeholders (Zavala-Alcívar et al., 2020). When net benefits flow abundantly, organizations can invest in fortifying their supply chains, reinforcing their resilience against the tempests of uncertainty (Tarigan et al., 2021). Drawing from the tapestry of previous studies, it is evident that supply chain resilience assumes the role of a vigilant guardian, moderating the impacts of disruptions and uncertainties (Tarigan et al., 2021). Therefore, the study propounds the following research hypothesis,

H9: *Supply chain resilience has significant moderating effect between net benefits and operations sustainability.*

2.3. Research Design

The research aimed to examine the influence of decision support system success on the sustainability of the service industry in Saudi Arabia, with an additional investigation into the moderating role of supply chain resilience. A deductive quantitative approach was chosen over qualitative methods due to its statistical capacity to generalize findings to larger populations, offering precise and measurable insights compared to the context-dependent nature of qualitative approaches (Almalki, 2016). Therefore, researchers opted for a quantitative research approach. Furthermore, a cross-sectional research design was utilized, wherein data was collected from research instruments at a single point in time. This design offers rapid insights into associations between variables across different groups. In contrast, longitudinal studies track the same variables over multiple time frames, providing deeper insights into causality and developmental processes (Rindfleisch et al., 2008). Therefore, the study employed a cross-sectional research design. The research was

explanatory in nature, aiming to establish causal relationships and offering detailed insights into the underlying mechanisms, as opposed to exploratory research which focuses on generating hypotheses and exploring phenomena (Bartels & Ketellapper, 1979).

2.4. Research Instrument

The researchers utilized a self-administered questionnaire adapted from existing literature, where it had undergone prior testing. The operational information quality consisted of four items, while system quality comprised six items, drawing from the research conducted by (Alshibly, 2015). The measurement of operational service quality was based on a single dimension, responsiveness, encompassing four items derived from the study by (Sureshchandar et al., 2002). Decision support satisfaction was assessed using three items, also sourced from (Alshibly, 2015). Additionally, net benefits were evaluated using five items adapted from (Alshibly, 2015), while product quality comprised four items sourced from (Agus & Shukri Hajinoor, 2012). Supply chain resilience was measured through eight items drawn from the research conducted by (Hamidu et al., 2023). Finally, operations sustainability was assessed using four items taken from the study by (Raut et al., 2019). These adapted items were rated on a five-point Likert scale, ranging from 1 for strongly disagree to 5 for strongly agree.

2.5. Data Collection Procedure

The researchers collected data from employees in the Saudi Arabian service sector using self-administered questionnaires. They employed a convenient sampling method, distributing questionnaires to 400 employees, resulting in 320 valid responses. This approach ensured practicality and efficiency in reaching a diverse participant pool representative of the target population (Babbie, 2020). By using self-administered questionnaires, researcher bias and respondent discomfort were minimized, promoting candid responses (Creswell & Creswell, 2017). Although interviews were not conducted, the survey method provided scalability and standardized data collection (Bryman, 2016).

The substantial number of responses (320) enhanced the strength of the findings, offering sufficient statistical power and generalizability to draw meaningful conclusions (Johnson & Christensen, 2019). Analysis was conducted using SPSS and Smart PLS software.

2.6 Demographic Table

Table 1 displays the predicted results depicting the demographic characteristics of the respondents. Among the demographics, the majority of respondents are male, constituting a ratio of 67.75%, while females account for 31.25%. Furthermore, regarding age distribution, the highest percentage of respondents fall within the 35 to 44 years age group, representing 25%, followed by the 45 to 54 years age group, which accounts for 28.13%, indicating a relatively mature workforce. In terms of education, the highest proportion of respondents hold undergraduate degrees (43.75%), followed by master's degrees (31.25%). The distribution of years of work experience indicates a diverse range, with the largest proportion (21.88%) having worked for 15-

20 years. Additionally, the designation distribution reflects a higher representation of non-managerial employees (68.75%) compared to managerial employees (31.25%).

Table 1: Demographics Characteristics

Demographic	Frequency	Percentage
Gender		
Female	100	31.25%
Male	220	69.75%
Age Category		
Less than 25	4	1.25%
25 to 34	30	9.38%
35 to 44	80	25.00%
45 to 54	90	28.13%
55 to 64	70	21.88%
65 to 74	36	11.25%
Above 75	10	3.13%
Education		
College and Below	20	6.25%
Undergraduate	140	43.75%
Master's Degree	100	31.25%
PhD	60	18.75%
Working Years		
<5 years	16	5.00%
5-10 years	30	9.38%
10-15 years	50	15.63%
15-20 years	70	21.88%
20-25 years	60	18.75%
25-30 years	50	15.63%
>30 years	44	13.75%
Designation		
Managerial	100	31.25%
Non-Managerial	220	68.75%

3 Inferential Statistics

3.1 Convergent Validity

The measurement model's evaluation involves assessing convergent and discriminant validity through Partial Least Squares (PLS)-Structural Equation Modelling (SEM). Convergent validity is evaluated through factors such as factor loadings, alpha, composite reliability, and average variance extracted (AVE).

Table 2: Convergent Validity

Construct	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	AVE
OIQ	0.770	0.808	0.871	0.697
OSQ	0.892	0.943	0.919	0.695
OSV	0.933	0.937	0.953	0.834
PQ	0.845	0.856	0.889	0.616
DSS	0.930	0.967	0.947	0.784
NB	0.749	0.761	0.830	0.595
SCR	0.787	0.848	0.879	0.714

OSUS	0.956	0.935	0.959	0.749

Note: OIQ (Operation Information Quality), OSQ (Operations System Quality), OSV (Operations Service Quality), PQ (Production Quality), DSS (Decision Support Satisfaction), NB (Net Benefits), SCR (Supply Chain Resilience), and OSUS (Operations Sustainability).

Factor loadings represent the strength of the relationship between observed variables and their latent constructs (Hair et al., 2019). Moreover, internal consistency reliability indicators like Cronbach's alpha and composite reliability ensure that items within each latent construct reliably measure the same underlying concept (Fornell & Larcker, 1981). Additionally, the AVE statistic gauges the amount of variance captured by latent variables relative to measurement error (Chin, 1998). Convergent validity is confirmed when factor loadings are significant, Cronbach's alpha and composite reliability values surpass the threshold of 0.70, and the AVE value exceeds 0.5 (Hair et al., 2019). Table 2 presents the convergent validity results.

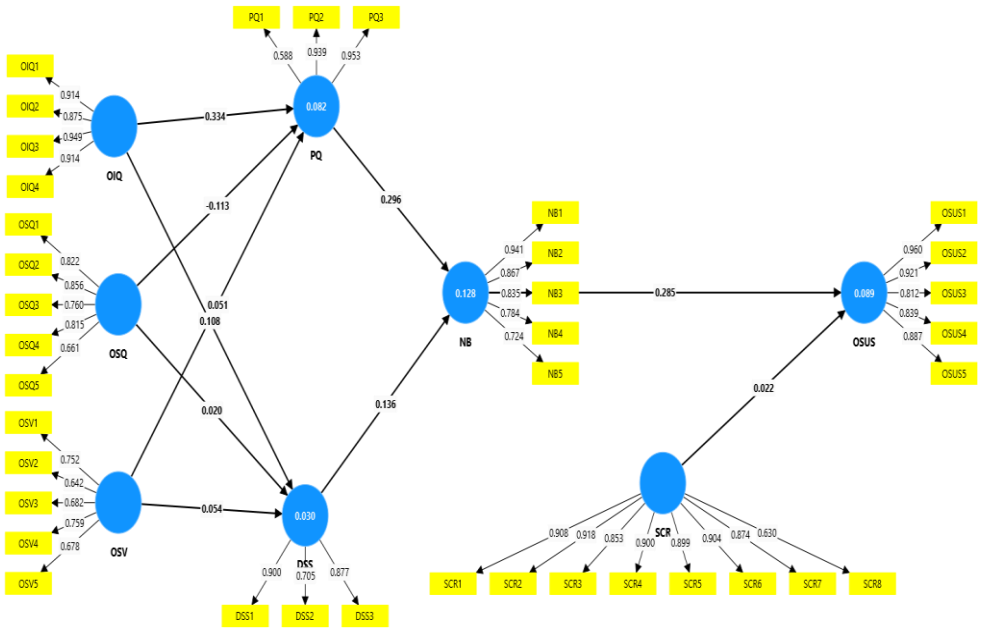

Figure 2: Measurement Model

3.2 Discriminant Validity

Discriminant validity holds significance within the measurement model as it delineates the uniqueness of each construct, ensuring that each latent variable captures a distinct facet of the phenomenon being studied (Hair et al., 2019). In PLS-SEM, discriminant validity is commonly evaluated using the Fornell-Larcker criterion and the Heterotrait-Monotrait (HTMT) ratio (Fornell & Larcker, 1981; Henseler et al., 2015). The Fornell-Larcker criterion juxtaposes the square root of the AVE for each construct with the correlations between that construct and all others, asserting that the former should be greater than the latter (Fornell & Larcker, 1981). Additionally, the HTMT ratio compares inter-construct correlations with the square roots of AVEs, with a threshold value typically set at 0.90 (Henseler et al., 2015). Table 3 presents the

predicted results, demonstrating that the constructs meet the criteria for discriminant validity.

Table 3: Discriminant Validity

Constructs	VIF	OIQ	OSQ	OSV	PQ	DSS	NB	SCR	OSUS
OIQ	2.13								
OSQ	3.32	0.241							
OSV	2.43	0.197	0.466						
PQ	2.34	0.189	0.647	0.723					
DSS	1.63	0.211	0.293	0.132	0.107				
NB	1.88	0.216	0.712	0.784	.090	0.117			
SCR	……	0.353	0.349	0.313	0.243	0.739	0.291		
OSUS	…..	0.123	0.640	0.451	0.688	0.169	0.763	0.208	

4. Hypothesis Results

Following the model assessment, the subsequent step involves testing the study hypotheses using the structural model. The PLS-SEM outcomes reveal that OIQ significantly and positively affects NB with the mediating effect of PQ, thus supporting proposed hypothesis 1. Furthermore, OSQ also positively and significantly influences NB through the mediating effect of PQ, corroborating proposed hypothesis 2. Additionally, OSQ significantly and positively impacts NB with the mediating effect of PQ, supporting proposed hypothesis 3. Moreover, OIQ and OSQ also positively and significantly influence NB with the mediating effect of DSS, which aligns with proposed hypotheses 4 and 5. However, OSV exhibits an insignificant impact on NB with the mediating effect of DSS, contradicting proposed hypothesis 6. Additionally, PQ demonstrates a significant and positive impact on DSS, supporting proposed hypothesis 7. NB also demonstrates a positive and significant impact on OSUS, thus confirming proposed hypothesis 8. Lastly, NB exhibits a significant and positive impact on OSUS with the moderating effect of SCR, aligning with proposed hypothesis 9. These interpreted results are summarized in Table 4.

Table 4: Hypothesis Results

Hypothesis	Beta	Standard Error	T-Statistic	P-Value	Conclusion
OIQ->PQ->NB	0.281	0.052	5.601	0.012	Supported
OSQ->PQ->NB	0.172	0.041	3.752	0.032	Supported
OSV->PQ->NB	0.101	0.032	2.801	0.021	Supported
OIQ->DSS->NB	0.152	0.061	2.501	0.035	Supported
OSQ->DSS->NB	0.072	0.022	3.202	0.025	Supported
OSV->DSS->NB	0.041	0.031	1.501	0.234	Not Supported
PQ->DSS	0.222	0.072	3.002	0.029	Supported
NB->OSUS	0.351	0.081	4.501	0.002	Supported
SCR*NB->OSUS	0.181	0.091	2.001	0.021	Supported
	R Square				
	R-Square	R-Square Adjusted			
DSS	0.084	0.045			
NB	0.126	0.108			
OSUS	0.153	0.127			
PQ	0.081	0.052			

5. Discussion and Conclusion

The findings illustrate a significant and positive relationship between operations information quality and net profits in the Saudi Arabian service sector, mediated by product quality. These results suggest that robust operations information facilitates informed decision-making regarding product development, delivery, and customer satisfaction. Similarly, operations system quality exhibits a positive and significant impact on net benefits through product quality mediation, emphasizing the role of efficient systems in enhancing service delivery and product quality, as supported by prior studies (Alshibly, 2015). Furthermore, operations service quality demonstrates a positive and significant influence on product quality, underscoring the importance of service excellence throughout the customer journey, consistent with previous research (Alshibly, 2015; Jasin & Firmansyah, 2023). These findings suggest that prioritizing operations service quality can enhance product quality perceptions, ultimately leading to increased net profits for companies in Saudi Arabia.

Moreover, a notable and positive influence of operations information quality on net profits has been identified, mediated by decision support satisfaction within the Saudi Arabian service sector. These findings suggest that effective information systems within organizations empower managers and decision-makers to timely allocate resources and enhance services, thereby augmenting company benefits. This assertion finds support in the research of Lin et al. (2023), who observed that firms investing in robust information systems and data analytics capabilities witnessed heightened levels of decision support satisfaction among managers, facilitating more efficient resource allocation and competitive positioning.

Furthermore, operations information systems exhibit a significant and positive impact on the net benefits of the Saudi Arabian service industry, mediated by decision support satisfaction. This outcome underscores the role of well-designed and effective operations systems in facilitating informed decision-making by providing decision-makers with the requisite tools and information to analyse performance metrics, identify areas for improvement, and formulate strategic decisions. Gupta et al. (2023) corroborate this argument, demonstrating that companies leveraging advanced operations systems and analytics capabilities are better positioned to monitor customer feedback, discern emerging trends, and enhance their services accordingly, leading to heightened levels of decision support satisfaction among managers. This implies that investing in the quality of operations systems enhances decision support satisfaction, thereby positively impacting net profits in the Saudi Arabian service industry. Conversely, operations service quality exhibits an insignificant association with net benefits, mediated by decision support satisfaction. These findings suggest that the services rendered by organizations directly influence managers' perceptions of the effectiveness of decision support and their capacity to make informed decisions. Most of these findings align with mediating effect findings supported by previous studies where decision support satisfaction also exerts a significant impact (Chandra, 2023; Fraihat et al., 2023).

Additionally, product quality exerts a positive and significant influence on decision support satisfaction among managers in the Saudi Arabian service industry. These findings suggest that high-quality products not only meet customer needs and expectations but also instil decision-makers with confidence in their offerings. This

aligns with the research conducted by Akmal et al. (2023) and Cahaya et al. (2023), which demonstrated that companies prioritizing product quality and consistency witnessed heightened levels of decision support satisfaction among management. This confidence in the value proposition of their offerings empowered decision-makers to make informed decisions regarding pricing, marketing, and product development. Hence, it can be inferred that product quality in the Saudi Arabian service sector plays a pivotal role in enhancing decision support systems, consequently augmenting net economic benefits. In another context, net benefits also exhibit a significant effect on operational sustainability within the service industry. These results echo the findings of Ekins and Zenghelis (2021), who observed that companies prioritizing profitability and efficiency were more inclined to implement environmentally friendly practices such as energy conservation and waste reduction, thereby enhancing sustainability and reducing operational costs. Consequently, these outcomes indicate that net benefits positively and significantly influence operational sustainability by providing resources and incentives for organizations to adopt and uphold sustainable practices within the Saudi Arabian service industry. Finally, supply chain resilience significantly moderates the relationship between net benefits and operational sustainability within the Saudi Arabian service industry. These findings indicate that resilient supply chains empower organizations to navigate disruptions, mitigate risks, and uphold operational continuity, thereby enhancing sustainability. This assertion is corroborated by the research of Zavala-Alcívar et al. (2020), who posited that companies with resilient supply chains demonstrated greater agility in responding to external shocks, such as supply chain disruptions and market fluctuations, by promptly adjusting their operational and sourcing strategies. Consequently, supply chain resilience amplifies the positive impact of net benefits on operational sustainability by providing a safeguard against uncertainties and disruptions, ensuring operational continuity and long-term viability within the Saudi Arabian service industry. Hence, based on the foregoing discussion, it is contended that all factors are equally indispensable in enhancing the sustainability of the service industry in Saudi Arabia.

6. Theoretical implications

Theoretical implications of the study have significantly enriched the literature on the Saudi Arabian service industry. Firstly, by delving into the interplay among operations quality, decision support satisfaction, net benefits, and sustainability, this research advances comprehension of the distinctive dynamics within the Saudi Arabian service sector. Secondly, the validation of supply chain resilience as a moderator between net benefits and operations sustainability constitutes a novel addition to existing literature. This empirical evidence bolsters theoretical frameworks pertaining to supply chain management and sustainability by underscoring the pivotal role of resilience in mitigating risks and ensuring operational continuity within the Saudi Arabian service industry. Thirdly, the exploration of decision support satisfaction as an outcome variable furnishes valuable insights into the efficacy of decision support systems in facilitating managerial decision-making processes, thereby augmenting the theoretical understanding of these systems and their impact on enhancing operational performance and profitability. Lastly, the

study's significant findings pave the way for future research endeavours, offering researchers opportunities to extend the current research framework and explore new avenues of inquiry.

7. Practical implications

The study offers practical implications for the Saudi Arabian service industry. Firstly, it suggests that managers can utilize insights on operations quality, decision support satisfaction, and net benefits to guide strategic decision-making. Prioritizing investments in operations improvement initiatives, such as enhancing information, system, and service quality, can enhance product quality and customer experience, bolstering competitiveness. Secondly, recognizing supply chain resilience as crucial highlights the importance of resilient supply chains in Saudi Arabia's service industry. Thirdly, practitioners can enhance supply chain flexibility, redundancy, and collaboration to navigate market uncertainties, ensuring operational continuity and sustainability. Lastly, this research provides actionable insights for industry practitioners, policymakers, and scholars aiming to enhance service operations sustainability and resilience in Saudi Arabia and beyond.

8. Limitations and Future Directions

The study does have some limitations that warrant further exploration to expand the scope of research in this area. Firstly, the study primarily targets employees in the Saudi Arabian service industry, which may yield different outcomes in other regions or industries, thus limiting its generalizability. Therefore, future research could explore diverse economies and sectors to enhance the generalizability of findings. Secondly, the study focuses on only two mediating effects and one moderating effect, while there may be other moderating variables that influence these relationships. Hence, future research could investigate additional moderating influences to enhance generalizability. Additionally, the study predominantly focuses on a developing country, and future research could explore developed economies to broaden the study's applicability.

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References

Afful-Dadzie, E., Afful-Dadzie, A., & Egala, S. B. (2023). Social media in health communication: A literature review of information quality. *Health Information Management Journal*, *52*(1), 3-17. https://doi.org/10.1177/1833358321992683

Agung, S. (2020). The effect of service quality, service marketing mix and costumer value on consumer satisfaction and its impact on the loyalty of the consumer industry of the low-cost carrier flight in Indonesia. *International Journal of Innovative Science and Research Technology*, *5*(3), 1135-1147. https://ijisrt.com/assets/upload/files/IJISRT20MAR655.pdf

Agus, A., & Shukri Hajinoor, M. (2012). Lean production supply chain management as driver towards enhancing product quality and business performance: Case study of manufacturing companies in Malaysia. *International Journal of Quality & Reliability Management*, *29*(1), 92-121. https://doi.org/10.1108/02656711211190891

Akmal, E., Panjaitan, H. P., & Ginting, Y. M. (2023). Service Quality, Product Quality, Price, Promotion, and Location on Customer Satisfaction and Loyalty in CV. Restu. *Journal of Applied Business and Technology*, *4*(1), 39-54. https://doi.org/10.35145/jabt.v4i1.118

Almalki, S. (2016). Integrating Quantitative and Qualitative Data in Mixed Methods Research--Challenges and Benefits. *Journal of education and learning*, *5*(3), 288-296. http://dx.doi.org/10.5539/jel.v5n3p288

Alshibly, H. H. (2015). Investigating decision support system (DSS) success: A partial least squares structural equation modeling approach. *Journal of Business Studies Quarterly*, *6*(4), 56. https://www.researchgate.net/publication/278728377_June_2015_6_1

Alzoubi, H. M., Ahmed, G., & Alshurideh, M. (2022). An empirical investigation into the impact of product quality dimensions on improving the order-winners and customer satisfaction. *International Journal of Productivity and Quality Management*, *36*(2), 169-186. https://doi.org/10.1504/IJPQM.2022.124711

Amin, A. M. A. A. M., & Chandra, T. C. T. (2022). The Effect of Information Quality and Innovation on Customer Loyalty Mediating by Customer Satisfaction. International Conference of Business and Social Sciences. https://ojsicobuss.stiesia.ac.id/index.php/icobuss1st/article/view/302

Anand, K., Arya, V., Suresh, S., & Sharma, A. (2023). Quality dimensions of augmented reality-based mobile apps for smart-tourism and its impact on customer satisfaction & reuse intention. *Tourism Planning & Development*, *20*(2), 236-259. https://doi.org/10.1080/21568316.2022.2137577

Arif, D., Yulianti, R., & Pramudita, R. A. (2023). Promotion And Product Quality On Customer Loyalty: The Role Of Mediation In Customer Satisfaction Of Erigo Products. *Ecopreneur. 12*, *6*(1), 92-107. https://doi.org/10.51804/econ12.v6i1.11211

Aripin, Z., Paramarta, V., Saepudin, D., & Yuliaty, F. (2023). The Impact of Bank Service Quality on Satisfaction that Impacts Word of Mouth Promotion. *Jurnal Syntax Admiration*, *4*(8), 1127-1141. https://doi.org/10.46799/jsa.v4i8.690

Ayinaddis, S. G., Taye, B. A., & Yirsaw, B. G. (2023). Examining the effect of electronic banking service quality on customer satisfaction and loyalty: an implication for technological innovation. *Journal of Innovation and Entrepreneurship*, *12*(1), 22. https://doi.org/10.1186/s13731-023-00287-y

Babbie, E. R. (2020). *The practice of social research*. Cengage AU. https://au.cengage.com/c/isbn/9780357360767/?utm_source=GoogleBooks

Bartels, C. P., & Ketellapper, R. H. (1979). *Exploratory and explanatory statistical analysis of spatial data*. Springer. https://link.springer.com/book/10.1007/978-94-009-9233-7

Berry, L. L., Seiders, K., & Grewal, D. (2002). Understanding service convenience. *Journal of marketing*, *66*(3), 1-17. https://doi.org/10.1509/jmkg.66.3.1.18505

Bryman, A. (2016). *Social research methods*. Oxford university press. https://search.worldcat.org/en/title/1012878111

Cahaya, Y. F., Siswanti, I., Putra, Y. M., & Pattiwael, A. C. (2023). Contributions to Customer Satisfaction from Product Quality, Promotion and Price. *Journal of Economics, Finance and Management Studies*, *6*(6), 2434-2440. https://www.ijefm.co.in/v6i6/Doc/2.pdf

Chandra, S. (2023). Study analyzing the mediating effects of customer satisfaction in the relationship between ATM service quality and customer loyalty. *Frontiers in Business, Economics and Management*, *7*(1), 160-166. https://doi.org/10.54097/fbem.v7i1.3965

Chin, W. W. (1998). The partial least squares approach to structural equation modeling. *Modern methods for business research*, *295*(2), 295-336. https://psycnet.apa.org/record/1998-07269-010

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications. https://us.sagepub.com/en-us/nam/research-design/book270550

DeLone, W. H., & McLean, E. R. (1992). Information systems success: The quest for the dependent variable. *Information systems research*, *3*(1), 60-95. https://doi.org/10.1287/isre.3.1.60

DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: a ten-year update. *Journal of management information systems*, *19*(4), 9-30. https://doi.org/10.1080/07421222.2003.11045748

Ekins, P., & Zenghelis, D. (2021). The costs and benefits of environmental sustainability. *Sustainability Science*, *16*, 949-965. https://doi.org/10.1007/s11625-021-00910-5

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, *18*(1), 39-50. https://doi.org/10.1177/002224378101800104

Fraihat, B., Abozraiq, A., Ababneh, A., Khraiwish, A., Almasarweh, M., & AlGhasawneh, Y. (2023). The effect of customer relationship management (CRM) on business profitability in Jordanian logistics industries: The mediating role of customer satisfaction. *Decision Science Letters*, *12*(4), 783-794. http://dx.doi.org/10.5267/j.dsl.2023.6.003

Garcia, L., Samin, H., & Bencomo, N. (2024). Decision making for self-adaptation based on partially observable satisfaction of non-functional requirements. *ACM Transactions on Autonomous and Adaptive Systems*, *19*(2), 1-44. https://doi.org/10.1145/3643889

Gogoi, D. B. J. (2020). Service quality measures: How it impacts customer satisfaction and loyalty. *International Journal of Management (IJM)*, *11*(3), 354-365. https://ssrn.com/abstract=3585157

Guajardo, J. A., Cohen, M. A., & Netessine, S. (2016). Service competition and product quality in the US automobile industry. *Management Science*, *62*(7), 1860-1877. https://doi.org/10.1287/mnsc.2015.2195

Gunawan, I. (2022). Customer loyalty: The effect customer satisfaction, experiential marketing and product quality. *KINERJA: Jurnal Manajemen Organisasi dan Industri*, *1*(1), 35-42. https://doi.org/10.37481/jmoi.v1i1.6

Gupta, A., Singh, R. K., Mathiyazhagan, K., Suri, P. K., & Dwivedi, Y. K. (2023). Exploring relationships between service quality dimensions and customers satisfaction: empirical study in context to Indian logistics service providers. *The international Journal of logistics management*, *34*(6), 1858-1889. https://doi.org/10.1108/IJLM-02-2022-0084

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European business review*, *31*(1), 2-24. https://doi.org/10.1108/EBR-11-2018-0203

Hamidu, Z., Boachie-Mensah, F. O., & Issau, K. (2023). Supply chain resilience and performance of manufacturing firms: role of supply chain disruption. *Journal of Manufacturing Technology Management*, *34*(3), 361-382. https://doi.org/10.1108/JMTM-08-2022-0307

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the academy of marketing science*, *43*, 115-135. https://doi.org/10.1007/s11747-014-0403-8

Ifedi, C., Haque, R., Senathirajah, A. R. B. S., & Qazi, S. Z. (2024). Service Quality Influence On Consumer Satisfaction In The Banking Sector Aimed At Sustainable Growth. *Revista de Gestão Social e Ambiental*, *18*(7), e06025-e06025. https://doi.org/10.24857/rgsa.v18n7-032

Ilham, I., Widjaja, W., Sutaguna, I. N. T., Rukmana, A. Y., & Yusuf, M. (2023). Digital Marketing's Effect On Purchase Decisions Through Customer Satisfaction. *CEMERLANG: Jurnal Manajemen dan Ekonomi Bisnis*, *3*(2), 185-202. https://doi.org/10.55606/cemerlang.v3i2.1154

Jasin, M., & Firmansyah, A. (2023). The role of service quality and marketing mix on customer satisfaction and repurchase intention of SMEs products. *Uncertain Supply Chain Management*, *11*(1), 383-390. http://dx.doi.org/10.5267/j.uscm.2022.9.004

Jo, H., & Park, D.-H. (2023). Mechanisms for successful management of enterprise resource planning from user information processing and system quality perspective. *Scientific Reports*, *13*(1), 12678. https://doi.org/10.1038/s41598-023-39787-y

Johnson, R. B., & Christensen, L. (2019). *Educational research: Quantitative, qualitative, and mixed approaches*. Sage publications. https://www.amazon.com/Educational-Research-Quantitative-Qualitative-Approaches/dp/1544337833

Judijanto, L., Souisa, W., Rukmana, A. Y., & Kaniawati, K. (2023). The Effect of Organizational Culture, Digital Marketing Strategy, Service Quality, and Environmental Sustainability on Customer Satisfaction of MSME products in Indonesia. *Jurnal REKOMEN (Riset Ekonomi Manajemen)*, *6*(2), 181-196. https://doi.org/10.31002/rekomen.v6i2.1177

Knauer, T., Nikiforow, N., & Wagener, S. (2020). Determinants of information system quality and data quality in management accounting. *Journal of Management Control*, *31*(1), 97-121. https://doi.org/10.1007/s00187-020-00296-y

Lin, X., Mamun, A. A., Yang, Q., & Masukujjaman, M. (2023). Examining the effect of logistics service quality on customer satisfaction and re-use intention. *PloS one*, *18*(5), e0286382. https://doi.org/10.1371/journal.pone.0286382

Lizarelli, F. L., Chakraborty, A., Antony, J., Jayaraman, R., Carneiro, M. B., & Furterer, S. (2023). Lean and its impact on sustainability performance in service companies: results from a pilot study. *The TQM Journal*, *35*(3), 698-718. https://doi.org/10.1108/TQM-03-2022-0094

Luu Thi Thuy, D., Thi, U. N., Vo Hanh, Q., & Nguyen Thi My, N. (2024). Enhancing satisfaction and word of mouth of young mobile banking users through system quality and individual performance. *Cogent Business & Management*, *11*(1), 2338925. https://doi.org/10.1080/23311975.2024.2338925

Mahsyar, S., & Surapati, U. (2020). Effect of service quality and product quality on customer satisfaction and loyalty. *International Journal of Economics, Business and Accounting Research (IJEBAR)*, *4*(01). https://jurnal.stie-aas.ac.id/index.php/IJEBAR/article/view/950

Manchaiah, V., Swanepoel, D. W., Bailey, A., Pennebaker, J. W., & Bennett, R. J. (2021). Hearing aid consumer reviews: A linguistic analysis in relation to benefit and satisfaction ratings. *American Journal of Audiology*, *30*(3), 761-768. https://doi.org/10.1044/2021_AJA-21-00061

Manurung, H., Yudoko, G., & Okdinawati, L. (2023). A conceptual framework of supply chain resilience towards sustainability through a service-dominant logic perspective. *Heliyon*, *9*(3). https://www.cell.com/heliyon/pdf/S2405-8440(23)01108-8.pdf

Mariani, M. M., & Borghi, M. (2023). Artificial intelligence in service industries: customers' assessment of service production and resilient service operations. *International Journal of Production Research*, 1-17. https://doi.org/10.1080/00207543.2022.2160027

Mujianto, M., Hartoyo, H., Nurmalina, R., & Yusuf, E. Z. (2023). The unraveling loyalty model of traditional retail to suppliers for business sustainability in the digital transformation era: Insight from MSMEs in Indonesia. *Sustainability*, *15*(3), 2827. https://doi.org/10.3390/su15032827

Munawaroh, M., & Simon, Z. Z. (2023). The Influence of Store Atmosphere, Service Quality, Product Quality, and Price on Customer Satisfaction. *Research of Business and Management*, *1*(1), 35-44. https://doi.org/10.58777/rbm.v1i1.21

Munim, Z. H., Vladi, O., & Ibne Hossain, N. U. (2023). Data Analytics applications in supply chain resilience and Sustainability management: The state of the art and a way forward. *Data Analytics for Supply Chain Networks*, 1-13. https://doi.org/10.1007/978-3-031-29823-3_1

Muñoz, M., Reul, A., Guijarro, B., & Hidalgo, M. (2023). Carbon footprint, economic benefits and sustainable fishing: Lessons for the future from the Western Mediterranean. *Science of the Total Environment*, *865*, 160783. https://doi.org/10.1016/j.scitotenv.2022.160783

Negri, M., Cagno, E., Colicchia, C., & Sarkis, J. (2021). Integrating sustainability and resilience in the supply chain: A systematic literature review and a research agenda. *Business Strategy and the environment*, *30*(7), 2858-2886. https://doi.org/10.1002/bse.2776

Nguyen, D. T., Pham, V. T., Tran, D. M., & Pham, D. B. T. (2020). Impact of service quality, customer satisfaction and switching costs on customer loyalty. *The Journal of*

Asian Finance, Economics and Business, *7*(8), 395-405. https://doi.org/10.13106/jafeb.2020.vol7.no8.395

Nyinawimfura, J. (2013). *Service Quality and Organizational Performance of Insurance Companies in Rwanda* Kampala International University, College of Economics and Management]. https://tracking.afribary.com/works/service-quality-and-organizational-performance-of-insurance-companies-in-rwanda

Obeidat, S. M., Abdalla, S., & Al Bakri, A. A. K. (2023). Integrating green human resource management and circular economy to enhance sustainable performance: an empirical study from the Qatari service sector. *Employee Relations: The International Journal*, *45*(2), 535-563. https://doi.org/10.1108/ER-01-2022-0041

Pramudito, D. K., Arijanti, S., Rukmana, A. Y., Oetomo, D. S., & Kraugusteeliana, K. (2023). The Implementation of End User Computing Satisfaction and Delone & Mclean Model to Analyze User Satisfaction of M. TIX Application. *Jurnal Informasi dan Teknologi*, 7-12. https://doi.org/10.60083/jidt.v5i3.383

Prasetyo, A., Irawan, D., Sensuse, D. I., Lusa, S., Wibowo, P. A., & Yulfitri, A. (2023). Evaluation of e-Service Quality Impacts Customer Satisfaction: One-Gate Integrated Service Application in Indonesian Weather Agency. *International Journal of Advanced Computer Science and Applications*, *14*(1). http://dx.doi.org/10.14569/IJACSA.2023.0140116

Rajasa, E. Z., Manap, A., Ardana, P. D. H., Yusuf, M., & Harizahayu, H. (2023). Literature Review: Analysis Of Factors Influencing Purchasing Decisions, Product Quality And Competitive Pricing. *Jurnal Ekonomi*, *12*(01), 451-455. https://ejournal.seaninstitute.or.id/index.php/Ekonomi/article/view/1202

Rashid, D. A., & Rasheed, D. R. (2024). Logistics service quality and product satisfaction in e-commerce. *SAGE Open*, *14*(1),. https://doi.org/10.1177/21582440231224250

Raut, R. D., Mangla, S. K., Narwane, V. S., Gardas, B. B., Priyadarshinee, P., & Narkhede, B. E. (2019). Linking big data analytics and operational sustainability practices for sustainable business management. *Journal of cleaner production*, *224*, 10-24. https://doi.org/10.1016/j.jclepro.2019.03.181

Rindfleisch, A., Malter, A. J., Ganesan, S., & Moorman, C. (2008). Cross-sectional versus longitudinal survey research: Concepts, findings, and guidelines. *Journal of marketing research*, *45*(3), 261-279. https://doi.org/10.1509/jmkr.45.3.261

Sabouhi, F., Jabalameli, M. S., & Jabbarzadeh, A. (2021). An optimization approach for sustainable and resilient supply chain design with regional considerations. *Computers & Industrial Engineering*, *159*, 107510. https://doi.org/10.1016/j.cie.2021.107510

Setiadi, B., Kraugusteeliana, K., Risdwiyanto, A., Bakri, A. A., & Arief, I. (2023). The Application of Delone and Mclean Framework to Analyze the Relationship Between Customer Satisfaction and User Experience of Mobile Application. *Jurnal Sistim Informasi Dan Teknologi*, 84-89. https://doi.org/10.37034/jsisfotek.v5i1.207

Shim, J. P., Warkentin, M., Courtney, J. F., Power, D. J., Sharda, R., & Carlsson, C. (2002). Past, present, and future of decision support technology. *Decision support systems*, *33*(2), 111-126. https://doi.org/10.1016/S0167-9236(01)00139-7

Sureshchandar, G., Rajendran, C., & Anantharaman, R. (2002). The relationship between service quality and customer satisfaction–a factor specific approach.

Journal of services marketing, *16*(4), 363-379. https://doi.org/10.1108/08876040210433248

Tarigan, Z. J. H., Siagian, H., & Jie, F. (2021). Impact of internal integration, supply chain partnership, supply chain agility, and supply chain resilience on sustainable advantage. *Sustainability*, *13*(10), 5460. https://doi.org/10.3390/su13105460

Tint, P. P. P. (2023). *Service Quality and Customer Satisfaction towards Home Loan Services of YOMA Bank (Ma Phyu Phyu Phone Tint, 2023)* MERAL Portal]. https://www.researchgate.net/publication/377358718

Utomo, A. P., Mariana, N., & Saefurrohman, S. (2023). Evaluasi Keberhasilan Sistem Informasi Universitas. *JATISI (Jurnal Teknik Informatika dan Sistem Informasi)*, *10*(1), 565-579. https://doi.org/10.35957/jatisi.v10i1.3604

Venkatakrishnan, J., Alagiriswamy, R., & Parayitam, S. (2023). Web design and trust as moderators in the relationship between e-service quality, customer satisfaction and customer loyalty. *The TQM Journal*(ahead-of-print). https://doi.org/10.1108/TQM-10-2022-0298

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478. https://doi.org/10.2307/30036540

Wong, C. W., Lirn, T.-C., Yang, C.-C., & Shang, K.-C. (2020). Supply chain and external conditions under which supply chain resilience pays: An organizational information processing theorization. *International Journal of Production Economics*, *226*, 107610. https://doi.org/10.1016/j.ijpe.2019.107610

Wowling, S. A. S., Yusuf, M., Gampu, S., & Sahala, J. (2024). Product Quality And Pricing Influence On The Brand Reputation Of Loco Coffee Fast Food Products. *Jurnal Darma Agung*, *30*(2), 541-548. http://dx.doi.org/10.46930/ojsuda.v30i2.2265

Yang, C.-C., Yang, S.-Y., & Chang, Y.-C. (2023). Predicting older adults' mobile payment adoption: An extended TAM model. *International journal of environmental research and public health*, *20*(2), 1391. https://doi.org/10.3390/ijerph20021391

Zavala-Alcívar, A., Verdecho, M.-J., & Alfaro-Saiz, J.-J. (2020). A conceptual framework to manage resilience and increase sustainability in the supply chain. *Sustainability*, *12*(16), 6300. https://doi.org/10.3390/su12166300

Appendix: Questionnaire

Constructs	Survey items	1	2	3	4	5
Information quality	Information from the DSS is easy to understand					
	The DSS provides sufficient information					
	The DSS provide reports that seem to be just about exactly what I need					
System quality	The DSS provide up-to-date information.					
	The DSS allows information to be readily accessible to me.					
	The DSS makes information very accessible.					
	The DSS always does what it should. SQ4: The DSS user interface can be easily adapted to one's personal approach.					
	All data within the DSS is fully integrated and consistent.					
	The DSS can be easily modified, corrected or improved.					
Service quality	Employees of bank are always willing to help customers					
	Employees of bank respond to customer request promptly					
	Fast and efficient counter services					
	Bank provides more branches to open up					
Product Quality	Product performance					
	Product reliability					
	Product durability					
	Product conformance					
Supply chain resilience	Our company collaborates with its main suppliers to achieve shared objectives					
	"Our company creates strategic goals in collaboration with our supply chain partners."					
	Our business equally distributes benefits and risks with its supply chain partners					
	Our business collaborates with the main participants in its supply chain for mutual gain					
	Demand forecasting is done jointly by us and supply chain partners					
	"We undertake joint planning and decision-making with our supply chain partners."					
	To lessen a disturbance, our company's supply chain can change the quantity of orders from suppliers					
	Our company's supply chain can modify the supplier's order delivery deadline to minimize a disturbance					

Decision support satisfaction	Using the DSS assists me in making a decision more effectively.
	The DSS has met my expectations.
	Overall, I'm satisfied with the DSS ability to enables me to make better decisions.
Net benefits	The DSS enhances my awareness and recall of job related information
	The DSS enhances my effectiveness in the job.
	The DSS is cost effective.
	The DSS has resulted in overall Productivity improvement.
	The DSS has resulted in improved business processes
Operations sustainability	Company has the ability to swiftly introduce new products to the market.
	Company displays agility in responding to market demand changes.
	Company maintains an exceptional on-time delivery record to major customers.
	Company offers a superior level of customer service to major client.
	Company has the ability to swiftly introduce new products to the market.