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A Comparative analysis of service supply chain performance using analytic hierarchy process methodology

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Abstract

The study aims to provide a comprehensive analysis of the service supply chain (SSC) of small and medium scale enterprises (SMEs) and to offer insights to improve its supply chain performance. The study employs mixed methods, to analyse the data collected from SMEs. The findings highlight several key metrics of effective supply chain management in a service firm such as utilisation and flexibility of service capacity, inventory, order lead times, relationships between the organisation, its suppliers and customers, the importance of effective demand forecasting and inventory management as valuable attributes to improve the supply chain performance of service firms. Inventory lead time is presented as a fundamental metric useful in determining the service supply chain performance of SMEs.

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Keywords: Supply Chain; Performance; Service Company; Metrics; AHP

1. Introduction

The offshoring of British manufacturing companies in the early 1980's, attributed to major trade reforms in China [15], preceded a general shift towards a service economy. In January 2023, the service sector accounts for 79% of the

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UK's economic output [3] and 61% of UK employment [9] with a significant proportion linked to service-only supply chains (SOSC). Despite no physical product, SOSCs have an 'intangible' material flow, that is, natural, and human resources are consumed in the creation of an immaterial product. A significant contributing factor to the lack of well-established analytic methods is the relatively young history of service sector analysis, spanning approximately 40 years as opposed to manufacturing, which has a history of nearly 200 years. That field immaturity is reflected in the decentralised nature of procurement and management services within service companies, wherein each unit have independently acquired services, creating a complex, expensive, and difficult situation to manage associated suppliers' networks. The great variety of services provided in the sector often results in an equally broad variety of reporting. Contemporary efforts have adapted existing product-based supply chain performance models for use in SOSC's to extract potential improvements in SSC management and the implications. The model conversion was achieved by equating product inventory to service capacity. However, this involves many assumptions and is shown to be insufficient in addressing the significant issues unique to the service sector, including vagueness and difficulty in development of service specifications. The purpose of this study is to investigate service supply chain performance (SSCP) in SMEs. Though, in its infancy and with little information existing in the field.

This article begins with an introduction of fundamental issues in service supply chains in section 1. Section 2 presents an examination of the current body of literature, and a review of the metrics incorporated within the models is established in section 3. Subsequently, the methodology (section 4) expounds on the implementation of these metrics within the proposed model. That is followed by section 5 with the discussion of the model's output/results and the inferences drawn, is presented in section 6. Additionally, an assessment of the model's achievements is provided.

2. Literature Review

Wang et al. [17] explicitly and extensively define the two types of services: "product service supply chains" (PSSC) and "service-only supply chains" (SOSC). The difference between the two is attributed to the interaction between products and customers. PSSCs focus on delivering physical products to their customers, such as a restaurant serving food while SOSCs offer service capacity as their primary product. For instance, financial advisors fall into the category of SOSCs as they provide services related to investments and banking decisions without selling any physical products.

Doney et al. [10] recognise that SSCs have an inherent "intangible" component, which affects the accuracy of SSCP assessment. Unlike manufacturing supply chains, where the material flow through processes can be quantitatively measured and evaluated, the intangible nature of SSCs hinders direct measurement. Consequently, without discrete measurements of success, the evaluation of SSCP becomes ambiguous, often involving subjective assessments and/or the utilisation of intuition. To mitigate the intangibility factor, existing manufacturing sector models are often converted by equating product inventory to service capacity. Ellram et al. [11] conducted an analysis of three product-based supply chain performance models (Hewlett-Packard (H-P), Supply Chain Operations Reference (SCOR), and Global Supply Chain Forum Framework (GSCF)) when adapted for use in the service sector. They recognised that SSCs follow 7 high-level processes, later refined by Baltacioglu et al. [1] into the framework shown in Table 1.

Estampe et al. [13] similarly reviewed models from the manufacturing sector and their application within SSCP analysis. However, the authors reviewed 16 supply chain performance models introducing "supply chain maturity" metrics to aid managers in the selection of the most suitable model for its SSC. An extensive list of metrics was developed, including decision-making level (strategic, tactical, operational), types of flow, maturity level, quality factors, against which the efficacy of each model was compared, resulting in a comprehensive table of what each method can achieve. A common trend throughout both analyses was the reliance on existing analytical methods converted for use not optimised for, thus often necessitating the use of multiple models to get a comprehensive view of the SSC while potentially introducing human subjectivity and uncertainty into the results. A study performed by D. W. Cho et al. [5] provides a unitary SSCP model which accounts for uncertainty introduced by the intangibility of services and subjectivity introduced into the analysis. The paper highlights the need for a singular, holistic method since "discrete sites in supply chain do not maximise efficiency if each pursues goals independently". Previous work was recognized by consolidating a set of performance metrics that the model addressed by categorizing them into financial and non-financial factors. To account for the variation of supply chains within the service sector, analytic hierarchy process (AHP) is employed. AHP is a highly effective multi-criteria decision method (MCDM) used to facilitate the evaluation of several, sometimes conflicting, options, to rank solution alternatives while accounting for the differing needs of supply chains. The AHP model functions by breaking down and arranging the problem under study into a hierarchy using a 10-point scale, the components of which are then compared pairwise. The main disadvantage of AHP is its inability to handle ambiguity, an issue that D. W. Cho et al. [5] rectified by the application of fuzzy set theory to account for the human subjectivity introduced in the nominal scaling of hierarchy components.

Table 1. High-level processes in service sector businesses according to Baltacioglu et al. [1]

Process	Definition
Order process management	Organising response for orders processed from customers. The scope of order process management includes getting orders until delivering service to customers.
Service performance management	Management services systems, all of which should be considered when managing, measuring, modifying, and rewarding service performance to improve organisational performance to achieve corporate strategic aims and promote its mission and values.
Capacity and resource management	Management capacity and resources of service, these resources are organised effectively and efficiently operate at optimum capacity.
Demand management	Managing and balancing customer demand by keeping up-to-date demand information.
Supplier relationship management	A process where customers and suppliers develop and maintain a close and long-term relationship as partners. SRM composes of five key components, including coordination, cooperation, commitment, information-sharing, and feedback.
Customer relationship management	Maintaining and developing long-term customer relationships by developing customer information continuously and trying to understand what they want.
Information and technology management	Adoption of technologies to support and collaborate within supply chain to improve service supply chain operations for achieving competitive advantage in their businesses.

Though fuzzy set theory aids in the reduction of subjectivity, some biases remain, as the method outlined by D. W. Cho et al. [5] still relies on a linguistic scale to describe the intensity/importance of relationships during pairwise comparison, the definitions of which may vary between individuals. A paper authored by S. Encheva [12] instead suggests that such judgement errors can be reduced, if not entirely mitigated, by use of a ternary AHP, wherein the intensity/importance of a relationship can only take one of three states: greater than, lesser than, or equal to in value. Encheva proposed the use of abstract mathematics to replace the scale used in 'normal' AHP without having to amend the method. As such, a ternary method should allow for use in existing MCDM software (for example, super decisions software) with limited manual calculations, unlike fuzzy-AHP which would require a significant amount of manual calculation or the development of bespoke software.

3. Metrics of service supply chain performance

Collecting data is a crucial element of this study. However, due to the intangibility of services, it poses difficulties in directly measuring their performance. As such, the model assesses the impact of supply chain policies instead of their root causes. Additionally, since certain metric definitions can vary depending on the perspective from which the study aims to assess, it is crucial for the model to have clear and explicit definitions for its constituent metrics. An example of such ambiguity is productivity, which can be measured using explicit metrics like labour, total factor, capital, and material productivity [14]. The metrics integrated into this model are primarily derived from the framework established by D. W. Cho et al. [5], who thoroughly examined various suggested analysis criteria and identified the most pertinent ones for evaluating SSCP. These metrics are subsequently categorised based on the high-level processes identified by Baltacioglu et al. [1]. The study's limited ability to obtain measurements directly has resulted in modifications, primarily in the form of omissions. Since data collection relies on surveys, participants' willingness to provide answers sets the fundamental limitation, necessitating that the survey be kept short and simple. Consequently, some metrics had to be ignored due to difficulties in collecting them, primarily because a survey was an inappropriate data collection method. Table 2 presents the selected metrics included in the model, along with their corresponding high-level process.

Table 2. Metrics identified by D. W. Cho et al. included in the model grouped by high-level process.

Process	Metric
Order process management	Order entry method
	Lead time
	Service order path
Supplier relationship management	Buyer-supplier relationship level
	Evaluation of suppliers
Service performance management	Service delivery performance
	Flexibility
	Customer satisfaction
	Employee satisfaction
	Range of Services
	Total cost
	Customer query time
	Post-process services
Capacity and resource management	Service capacity
	Capacity utilisation
Customer relationship management	Customer retention
	Customer relationship
Demand management	Forecast accuracy
Information and technology management	Level of functional requirements

While several metrics within the model retained their original scope and definition as outlined by D. W. Cho et al., the metrics that were subject to revisions or elaboration are described in further detail in the following sections.

3.1. Service capacity

Service capacity is defined by the "maximum level of value-added activity over a period of time that the service process can consistently achieve under normal operating conditions" [5]. However, an individual worker's capacity varies significantly and is influenced by several factors that are difficult to measure. Hence, within this model, an employee's capacity is established based on labour productivity, representing the mean economic yield per worker. While this economic measure is adequate for high-level assessments, it can be further developed and individualised for lower levels of analysis.

3.2. Buyer-supplier relationship level

The level of the buyer-supplier relationship acts as a measure of supplier integration. Wiendahl et al. [19] propose a two-axis matrix which considers problem-solving competence and knowledge. The former refers to the degree of involvement of the supplier in improving the supply chain. It can range from unilateral problem-solving by the buyer to joint development, where the supplier contributes to problem and solutions capacities. The latter, 'knowledge', describes the supplier's understanding of the products it supplies. This can include knowledge of the product production and the product itself, which can be used to improve it. Although initially developed for the manufacturing sector, a similar relationship can be applied to the service industry (see Table 3).

Table 3. Buyer-supplier relationship matrix defined by Wiendahl et al. [18] adapted for the service sector.

Problem-solving competence / Knowledge	Unilaterally by buyer: Solutions and procedures predefined by customers	Joint development: Problem and solution competencies given by supplier
Only supply chain knowledge	The supplier utilises the delivery procedures specified by the customer when providing the ordered products.	The supplier employs their own procedures to optimally fulfil customer orders and deliver the products.
Supply chain and product knowledge	The supplier may offer recommendations to the customer regarding procurement choices, but the customer holds complete responsibility for making the final decision.	The supplier and customer collaborate to enhance the efficiency of the supply chain and oversee procurement choices.

3.3. Range of services

The effectiveness of a company's service implementation is strongly linked to the range of parallel services they provide. Therefore, to use their limited resources efficiently, a company should focus on improving the efficiency of their primary service. Companies that offer multiple parallel services, particularly ones that are unrelated, tend to have lower added value per employee, slower speed, and less reliable delivery [5]. An increasingly common example of this is convenience stores diversifying their offerings by introducing postal and courier services. However, by doing so, the company may be spreading their resources too thin, which can result in less investment and optimisation of both services. There is an exception to this rule, which is if an additional service generates enough profit to pay for itself, thereby functioning more so as two separate entities.

3.4. Post-process services

Post process services are services delivered after the primary service has taken place [4]. These may not necessarily act as a source of income but can provide value to the company by improving customer satisfaction. Post-process services differentiate themselves from parallel services (as described in section 3.3) by following directly on from the primary service. For instance, home delivery is a common post-process in the food sector. Restaurants, and increasingly food retailers, do not offer delivery as a primary service, but will only offer it in addition to placing an order with the primary process, i.e., ordering food. Post-process services may also act as a source of feedback [5]. Post-process services must evaluate metrics that are like the primary service, including customer perception of the service, competitive advantage generated by service offering, etc.

3.5. Demand forecast accuracy.

Effective demand management is essential for businesses to remain competitive and profitable. By accurately predicting demand, businesses can ensure that they have enough inventory to meet customer needs without overstocking, which can lead to waste, increased storage costs, and lost custom. The challenges faced by the service sector, particularly in SOSCs, are more pronounced than those encountered by product-oriented industries. This is primarily because services cannot be stored or stocked like physical products. Therefore, accurate demand forecasting is crucial, and as per Ellram et al. [11], demand management strategies should prioritise mitigating the effects of demand variability.

Demand forecasts consist of two elements: a systematic component and a random component, the latter of which can be interpreted as forecast error [11]. The objective of accurate forecasting is to reduce the impact of the random component, which can be mitigated by studying it. By analysing the forecast error, it is possible to evaluate the effectiveness of the systematic component and prepare for contingencies. Chopra and Meindl [6] suggest that studying forecast error is essential for determining the accuracy of the forecasting process and planning for unexpected events. In context of the model, forecast accuracy will be evaluated by measuring the rate of over- or understocking.

4. Methodology

The objective of this study is to develop a SSCP analytic model which will quantitatively identify areas of strengths and weaknesses from input of a company SSCP metrics. To demonstrate the validity of the model, specifically for SMEs, data of the operational and financial performance of SMEs in the food retail and catering sectors are used. For this, secondary data primarily from Statista for the year 2021 are used [7, 8, 16]. Through performing a comparative analysis of the outcomes, distinctions among the attributes and metrics become evident, thereby enabling the introduction of new supply chain policies aimed at enhancing SSCP.

The model takes into consideration variations in operational characteristics among different types of companies by assigning an importance weighting to each metric, varying for each company type. Multiple-criteria decision analysis (MCDA) is used to derive the relative importance of each criterion numerically.

MCDA is a discipline of operations research specialising in the numerical evaluation of conflicting criteria [3]. The methods employed in MCDA provide a framework for addressing complex problems and explicitly assessing individual criteria, making it an ideal choice when the decision's consequences are significant, or the number of factors involved is extensive and not immediately apparent. Among MCDA tools, analytic hierarchy process (AHP) is widely used in the service sector due to its calculation of consistency in judgements and ease of accessibility. Owing to the time-consuming nature of manually using AHP, this study employed the Super Decisions CFD software to conduct the analysis.

The software employs a graphical approach to visualise the connections between metrics, which are depicted as nodes. Nodes linked by logical relationships are organised into clusters and positioned within a hierarchy determined by the assignment of comparison groups. In this hierarchy, the top "goal" represents the ultimate objective of the analysis, while lower-level clusters work together to achieve this goal. Similarly, the SSCP metrics are integral in achieving the objective of enhancing the supply chain of service companies. Super Decisions CFD provides several modes of judgement, wherein the user conducts a pairwise comparison of each node relative to their parent cluster. This, however, introduces a significant source of uncertainty as it features a linguistic scale to describe the intensity of relationships between comparatives. While fuzzy set theory [5] or binary/ternary [12] methods, could address this issue, they were not considered due to their excessive complexity and the limited scope of this research.

Concurrent to the judgement process, an inconsistency score is computed to indicate any inconsistencies in importance assignment. While some inconsistency is expected due to the subjective nature of human decisions, the score should remain below 0.1. With the metric judgements complete, the numerical importance weightings can be synthesised and outputted into a super matrix. These values indicate how significant an individual metric is in relation to the entirety, expressed as a decimal. Subsequently, this decimal is used to modify the reported data through multiplication, yielding the outcome referred to as the "weighted result." A higher value indicates an increased SSCP for a specific company, considering the metric's significance in the company's operational context.

5. Results and discussion

To demonstrate the effectiveness of the model, two sets of data were generated from secondary sources. Each of these datasets depicted a distinct company type: Company 1 represented a restaurant, while Company 2 represented a food retailer. This differentiation enables the model to showcase not only its ability for relative assessment but also the incorporation of metric importance weighting into this case study. To establish the data entries, a set of quantitative questions designed in a survey format was created, each associated with predetermined values that the responses would adopt. The values, presented below under the label of "reported data", function in a manner like responses collected through a survey. Subsequently, these values were multiplied by the metric weighting corresponding to each company type to generate the "weighted result", a crucial factor used in the ultimate comparative analysis.

Below is a comprehensive compilation of the original datasets for each metric, their weighting, along with their associated final weighted results, divided by their high-level process as presented in Tables 4, 5, 6, 7 and 8.

Table 4: Model results and importance weighting for order process management and IT management

Metric	Company 1				Company 2			
	Weight	Reported data	Units	Weighted result	Weight	Reported data	Units	Weighted result
Inventory lead time	0.092	2	Days	0.184	0.093	8	Days	0.744
Order lead time	0.097	20	Mins	1.95	0.0208	7	Mins	0.145
IT functionality	0.014	4		0.056	0.089	6		0.537
IT improvement	0.010	1		0.010148	0.0073	0		0

Table 5: Model results and importance weighting for service performance management

Metric	Company 1				Company 2			
	Weight	Reported data	Units	Weighted result	Weight	Reported data	Units	Weighted result
Profit margin	0.105	171000	GBP	18100	0.099321	141000	GBP	14004.261
Productivity	0.033	2		0.0662	0.0159	1		0.0159
Service value	0.089	4		0.359	0.0189	1		0.0189
Flexibility								
Volume	0.00171	1		0.00171	0.000781	2		0.00156
Delivery speed	0.0143	1		0.0143	0.00654	1		0.00654
Specification flex.	0.00428	1		0.00428	0.00195	2		0.00391
Customer satisfaction								
Customers spend per visit per location.	0.0421	130		5.48	0.0450	8		0.360
Customer review	0.0127	3	GBP	0.0383	0.0136	5	GBP	0.0682
Customer referral	0.00386	6		0.0232	0.00413	2		0.00826
Employee satisfaction								
Employee referral	0.000665	8		0.00532	0.000587	1		0.000587
Employee turnover	0.00335	0		0	0.00295	0		0
Employee absence	0.00844	283	Days	2.391	0.00745	200	Days	1.49
Range of services	0.00807	2		0.0161	0.0264	1		0.0264
Total costs								
Added value per employee	0.070	5896.55	GBP/EE	415.08	0.0707	3439.02	GBP/EE	243.43
Costs of process improvement	0.0175	5771	GBP	101.65	0.0176	0	GBP	0
Customer query time	0.0568	6	Mins	0.341	0.0278	10	Mins	0.278
Post-process services	0.00697	0		0	0.00751	1		0.00751

Table 6: Model results and importance weighting for capacity, resource, and demand management

Metric	Company 1				Company 2			
	Weight	Reported data	Units	Weighted result	Weight	Reported data	Units	Weighted result
Service capacity	0.0243	145		3.530315	0.0908	205		18.6
Capacity utilisation	0.0278	79		2.198254	0.0412	6		0.2475
Over/understocking	0.0557	2		0.111512	0.1193	1		0.1193

Table 7: Model results and importance weighting for supplier relationship management

Metric	Company 1				Company 2			
	Weight	Reported data	Units	Weighted result	Weight	Reported data	Units	Weighted result
Buyer-supplier relationship								
No. Suppliers	0.000779	6		0.00467	0.0180	5		0.0901
Supplier loyalty	0.000729	15		0.0109	0.0168	3		0.0506
Supplier market	0.00156	1		0.00156	0.0362	1		0.0362
Complexity in purchase decisions	0.00611	5	Years	0.0305	0.1415	4	Years	0.566
Business potential	0.00189	2		0.00378	0.0438	1		0.0438
Product priorities	0.00290	3		0.00870	0.0671	2		0.134
Evaluation of suppliers	0.0342	3		0.102	0.0632	2		0.126

Table 8: Model results and importance weighting for customer relationship management

Metric	Company 1				Company 2			
	Weight	Reported data	Units	Weighted result	Weight	Reported data	Units	Weighted result
CRM	0.0600	1		0.0600	0.0160	1		0.0160
Repeat customers	0.0891	14		1.24	0.0583	3		0.175

The model in question has a limited number of metrics given its proposed analysis scope, these metrics are defined at a high level. Consequently, measuring them with a single metric poses challenges, as it would introduce uncertainty caused by assumptions and oversights. To address this issue, sub-metrics were introduced to assess the constituent characteristics of each primary metric. For instance, flexibility was divided into three sub-metrics to measure different aspects that enable SSC to quickly adapt to changing customer demands. However, certain metrics such as ‘CRM’, and sub-metrics like ‘supplier market’ (component of buyer-supplier relationship), would benefit from having their own set of sub-(sub-)metrics. Conducting a full analysis of these additional levels of metrics would exceed the scope of this study, though would benefit from further elaboration in future research.

The profit margin was identified as the most crucial metric for restaurants, an expected outcome considering that the primary objective of any business is to remain profitable. However, according to the AHP weighting, retailers place slightly greater importance on reducing the complexity of purchase decisions than on the profit margin. This could be attributed to the fact that retailers often need to rely on a larger number of suppliers to sustain their operations. The highest common metric between the two sectors is *inventory lead time*, which can be attributed to the desire to minimise waste caused by products arriving at expiration dates and the need to plan stock to accommodate new and/or more desirable products.

The metrics constituent to this model largely originated from the framework presented by D. W. Cho et al. [5] which were found to comprehensively analyse the many facets of a company’s SSCP. The model effectively employed most of these metrics, excluding only, those that fell outside the project's scope. D. W. Cho et al. [5] also were among the first authors to introduce AHP for prioritising measurement criteria. While acknowledging the advantages of AHP prioritisation, this study declined the adoption of fuzzy-set theory to address the issue of degree of membership. The reason for rejecting fuzzy-set theory was its potential to complicate the model's functionality and render it unusable for non-mathematicians, as the model was intentionally designed for simplicity. Nonetheless, the paper acknowledges the presence of uncertainty arising from the scale used in pairwise comparisons.

S. Encheva [12] presented a method involving eigenvectors to achieve a higher level of consistency while saving time and effort for decision-makers. The time-consuming nature of pairwise comparisons was recognized when dealing with numerous criteria and the irrelevance of discerning judgment intensity in most applications. Thus, this approach simplified the decision-making process by reducing the 9-point scale to a simpler 3-point scale. This limited decision-making to determining whether criterion 1 is more important, equally important, or less important than criterion 2. Although eigenvectors may still be challenging for non-specialists to grasp, they are significantly easier to comprehend and utilise compared to fuzzy-set theory. The implementation of Encheva's work in the model was originally intended but was ultimately unfeasible due to scope constraints. However, it is strongly advised that future endeavours explore what this project was unable to achieve, as this method offers a relatively simple approach that consequently reduces the introduction of methodological uncertainty.

As aforementioned, most existing models are designed for the manufacturing sector. The primary distinction between manufacturing and service supply chains lies in the presence of a tangible product in the former, which undergoes a series of processes and modifications along the chain while, in the case of SOSCs there is no identifiable object in the supply chain. Estampe et al.'s [13] evaluation of SSCP analysis methods was founded on the assumption that inventory and service capacity were equivalent, which compelled measurement methods intended for discrete factors to measure criteria that were intangible in nature. The approach presented in this paper sets itself apart from previous studies by evaluating the impact of service only supply chain performance metrics. Due to comparative analysis, the companies studied could be directly compared to their competitors, rather than being assessed against a fixed set of criteria defined by a model. This approach enables a more accurate representation of the SSCP within the specific macroeconomic spectrum in consideration.

Concluding, the model was effective in identifying trends at the process level, accurately identifying areas where each company had a competitive edge and highlighting areas that required improvement to enhance their competitive advantage. However, the model has challenges with some individual metrics. This was mainly because the overall performance was calculated by summing up all the individual metrics, which meant that metrics with large values, such as profit, had disproportionately more weight than those with small values, like CRM. The model struggled with weighting metrics with significant difference in size. In such cases, the model could incorrectly rank the worse-performing company as superior. Despite these limitations, the model correctly identified that Company 1 outperformed Company 2 on most service supply chain performance metrics. The model proposed by this study followed the framework as suggested by D. W. Cho et al. [5], with influence for the development of individual metrics which are like the works of Ellram et al. [11], Estampe et al. [13], and Wiendahl et al. [18, 19]. The proposed model differs from previous studies in two ways. First, it introduces a prioritisation system for specific metrics based on the type of company, allowing for a more tailored approach to improving SSCP. Secondly, it simplifies the model through comparative analysis, ensuring its accessibility for SMEs. Moreover, the other benefit is the accurate reflection of a SME's SSCP competitiveness in comparison to its competitors, rather than reliance on arbitrarily set or derived benchmarks. Future research could expand the metrics studied and include a more detailed review of complex metrics such as CRM, which can provide a better understanding of a company's operations.

6. Conclusion

In mature economies, where service sectors are gaining prominence, the significance of overseeing and managing the service supply chain has grown exponentially. While many of the current methodologies are accessible mainly to well-resourced companies, SMEs, which constitute a substantial portion of these economies, are often left to speculate when seeking to enhance their supply chains. This research introduces a new concept for an SSCP analysis model. Drawing insights from a literature review and existing practices, this study incorporates valuable lessons into a new and more inclusive model. The model employs metrics originally identified by D. W. Cho et al. [5], to establish the parameters for evaluation. A distinctive aspect of the model is its incorporation of a weighting system, accommodating the diverse requirements of different types of service-oriented businesses. By employing this model, the performance of each company within the study is compared against others, revealing strengths and weaknesses in their respective service supply chain practices. Importantly, this comparative analysis allows for direct comparisons among the studied companies and their competitors, rather than evaluating them against a fixed set of criteria outlined by a model.

The effectiveness of the model was showcased in a case study that involved a comparison between two differing types of service sector enterprises. Although both companies operated in the food industry, one was focused on providing food services, while the other was engaged in food retail. Both sectors play a crucial role in economies due to the consistently high demand for food resources. Consequently, ensuring competitive standing in a substantial and expanding market necessitates the implementation of a proficient SSCP measurement system. Although improvements are required, the model demonstrated its capability to pinpoint specific strengths and weaknesses within a company's SSC, while considering the operational significance of these metrics. Further development should focus on minimising uncertainty through the reduction of qualitative elements within the model, alongside the improvement of techniques for measuring the specified metrics.

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