The Role of Supply Chain Management in Service and Satisfaction to Loyalty in Transportation Business

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Abstract— **Communication between buyers and sellers is central to the supply chain philosophy, which can improve customer satisfaction. The purpose of this study is to analyze the effects of supply chain on service scape and customer satisfaction to loyalty in transportation business. This study also analyze the role of satisfaction as mediating variable in the relationship between service scape and customer loyalty in supply chain process. Design of this study is quantitative, which developed an estimation model based on structural equation model to analyze the relationship among latent variables in this study. Data collection instruments using questionnaires were collected directly and online. The sampling technique was purposive sampling. It involves 115 respondents. Service scape is proven to have a significant effect on passenger satisfaction, but does not have a significant effect on passenger loyalty. Passenger satisfaction is proven to have a mediating role on the relationship between service scape and passenger loyalty. Service scape could be developed as a strategy to increase the quality of the service in transportation business. In this study, aesthetics, comfort, cleanliness and lay out of transportation vehicle and support plays a significant role to customer satisfaction. Service provider should redesign their business process based on supply chain process. Service scape represents an important aspect in service business, physical aspect in the intangibility. All factors in the supply chain aesthetics, comfort, cleanliness and lay out are operational variables of intangibility in service quality.**

Keywords— *Service scape, customer satisfaction, supply chain management, passenger loyalty, quality of the service.*

Introduction

In recent decades, supply chain management has become extremely important to companies operating in an increasingly competitive global marketplace. The need to improve operations, increasing levels of outsourcing, rising costs, competitive pressures, increasing globalisation, increasing importance of e-commerce and the complexity of the supply chain emerged as the main reasons for the development of the supply chain management approach. The assessment of consumers greatly relies on the service scape that surrounds the service in supply chain process [1]. Service scape has been proven to influence consumer attitudes and behavior in creating satisfaction, which in turn has a positive effect on the desire to repeat the service experience [2]. Moreover, service scape effectively enhances customer satisfaction and increase repeat business [3].

Consumer satisfaction is a relevant mediating variable on service scape and loyalty intention [4]. The mediating effect of customer satisfaction between service scape and loyalty has been extensively investigated in which it is proven to have a positive effect [5, 6]. Previous studies have focused on hotels, restaurants and shopping centers as research objects. Analysis of service scape in public transportation is also essential due to the costs for maintenance and regeneration of service scape is quite high. However, maintenance and regeneration must be scheduled to enhance and maintain customer loyalty. The higher the loyalty, the higher the profitability [7]. The profits will be further utilized for the company survival. Therefore, this study aims to analyze the effect of service scape on the loyalty of BST passengers with customer satisfaction as a mediating variable.

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Service scape includes ambient conditions, i.e., temperature and music; objects that assist the company in carrying out its tasks, i.e., furniture and business equipment; and other physical evidence, i.e., signs, symbols, and personnel artifacts [1]. For service companies, service scape is a service package, facilitates the process of service delivery, media outreach to consumers and employees, as well as the differentiation from the competition. Among the dimensions of service scape are aesthetics, comfort, cleanliness, and layout. Aesthetic dimension consists of color, interior design, architectural design, and decor of supporting equipment. Comfort dimension includes the comfort of seat, standing area, air temperature and lighting. Cleanliness dimension includes the cleanliness of the bus fleet, bus stops, and the overall service. The layout dimension includes the access to the bus and bus stops as well as ease of use of BST as a whole.

According to Kotler and Keller, consumer behavior is the study of how individuals, groups and organizations select, buy, use and dispose of goods, services, ideas or experiences to satisfy needs and demands [8]. In [9] defined consumer behavior as how individuals make decisions to spend their available resources (time, money, and effort) on consumption related items. Consumer decision making is a process of perceiving and evaluating information about a brand, considering brand alternatives based on consumer needs, and deciding on a brand. Furthermore, there are two factors that affect consumer choices, namely personal factor and external factor. The first factor includes individual needs, brand perception characteristics, and attitudes toward alternatives that affect decision making.

Satisfaction is a person's feeling of pleasure or disappointment resulting from comparing a product's perceived performance (or outcome) in relation to his/her expectation [8]. Consumer satisfaction may reap several valuable benefits for the company. As consumers satisfy with a product, they tend to buy in large quantities and give positive feedback. It eventually can reduce the possibility of losing to competitors. In fact, consumers are often willing to pay higher and be loyal to products that satisfy their needs rather than taking risks by moving to available alternatives with lower prices [1].

Consumer loyalty is the loyalty of consumer to specific companies, brands or products [9]. According to Sutisna, loyalty is favoritism toward a brand as indicated by frequent purchase of that brand over time [10]. In [11] suggested general characteristics of consumer loyalty, namely repurchasing product regularly, purchasing products off the line, recommending to others, and

showing immunity to similar products from competitors. The higher the loyalty, the higher the corporate profits [7]. Loyalty may enhance profits through increased sales profits, new consumer from recommendations, reduced marketing costs, and premium pricing.

The purpose of this study is to analyze the effects of service scape to customer's loyalty. In this study we propose satisfaction as a mediating variable in the relationship between service scape and loyalty. Setting of this study is transportation business in Indonesia. In such business, quality of the service should be build and maintain by the provider. Therefore it is important to create strategy to strengthen quality of the service in this business.

1. Literature Review

2.1 Relationship between Service scape and Satisfaction

Lee and Kim [6], revealed that the aesthetic dimension in service scape is relatively more tangible than the ambient factors (temperature, lighting) and is a powerful determinant of consumer satisfaction. Attractive and compatible design gives a good impression hence consumers will be satisfied with the facility. In addition to aesthetics facility, cleanliness is also considered very necessary in public facilities and directly affects customer satisfaction. Meanwhile, comfort has a more favorable impact upon the emotional state of the customers [12], in which it has a positive effect on consumer satisfaction. Layout is also found to be an important factor for customer satisfaction. Good spatial arrangement will provide convenience for consumers and increase their satisfaction in using it. Based on the literature, the following hypotheses were drawn:

H1: Aesthetic dimension has a positive and significant effect on passenger satisfaction

H2: Comfort has a positive and significant effect on passenger satisfaction

H3: Cleanliness has a positive and significant effect on passenger satisfaction

H4: Layout has a positive and significant effect on passenger satisfaction

2.2 Relationship between Service scape and Loyalty

Hussainy argued that aesthetic dimension would likely be form loyalty intentions as it affects the belief of consumers about its trustworthiness, affordability, success and effectiveness of the company [4]. Moreover, consumers have a

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propensity to select, stay, and return to service depending on the perceived level of cleanliness [13]. Comfort is also proven to have a positive impact on consumer loyalty [4]. It is reaffirmed by Blodget and Wakefield in which seating comfort is the most important feature that adds on the leisure activities, and therefore proves the maximum loyalty amongst many customers [14]. Comfort is relatively needed for consumers who use certain facilities or services in for long hours [4]. The layout of service scape should not be neglected because it is one of the important determinants of consumer loyalty to certain companies [15]. Therefore, the following hypotheses were drawn:

H5: Aesthetic dimension has a positive and significant effect on passenger loyalty

H6: Comfort has a positive and significant effect on passenger loyalty

H7: Cleanliness has a positive and significant effect on passenger loyalty

H8: Layout has a positive and significant effect on passenger loyalty

2.3 Relationship between Satisfaction and Loyalty

The relationship between consumer satisfaction and loyalty has been investigated by Chi and Qu and Cronin, Brady, and Hult [16, 17]. Those studies revealed a positive relationship between consumer satisfaction and loyalty. Meanwhile, Han and Ryu confirmed the statistically significant, direct effect of consumer satisfaction on loyalty [18]. Consumer satisfaction is the most extensively used mediating variable in previous studies on Loyalty [19]. Consumer satisfaction will increasingly influence the possibility of consumers to repurchase products and services [20]. Loyalty has been directly associated to consumer satisfaction or dissatisfaction, while consumer satisfaction is claimed as one of the most powerful factors in brand loyalty [21]. Therefore, the following hypothesis was drawn:

H9: Passenger satisfaction has a positive and significant effect on passenger loyalty

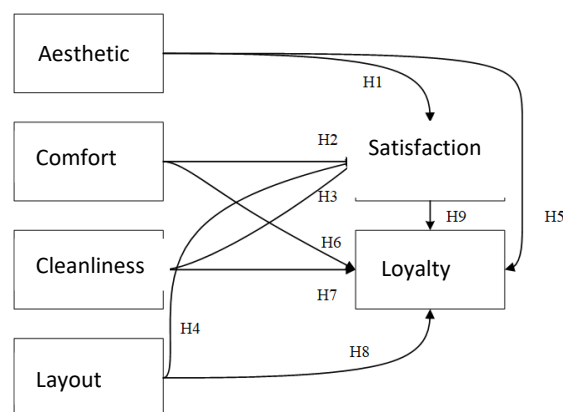Based on all the hypotheses mentioned previously, the research framework is constructed as follows:

Figure 1. Research Framework

The dimensions of service scape have been discussed previously. Lee and Kim [6], carried out a study with multipurpose buildings in Korea as the subject. It shows two dimensions of service scape, namely layout and comfort, have a significantly impact on service quality. Furthermore, cleanliness, layout and comfort have significant impact on consumer satisfaction. In overall, service quality and consumer satisfaction have positive effect on loyalty and reuse in service facilities. The originality of the present study relies on the analysis of the dimensions of service scape in public transportation modes. Previous studies are focused more on research objects such as hotels, restaurants and shopping. In this study, public transportation becomes the research object, considering the cost required for its maintenance and regeneration is quite high.

2.   Research Methodology

3.1 Supply Chain Management and the Service Industry

Although the concept of supply chains and supply chain management is relatively new, supply chains in fact have existed throughout economic history. When there exists a need for raw and/or semi-finished materials for production, a production facility to produce goods and services, and consumers who are willing to buy these products, then there also exists a supply chain. However, the importance of supply chains and their effective management to reduce costs as well as providing the goods and services at the right time and place began to be emphasized only in recent decades. This is particularly due to the fact that effective management of a supply chain transforms it into a value chain, in which the companies contained within it enjoy a number of benefits.

This study is a quantitative study with causal research design that aims to analyze the relationship between the dimensions in service scape with consumer satisfaction and loyalty. The

population is all passengers of Batik Solo Trans (BTS) corridor 1 with the sample of 115 respondents. The sampling technique was purposive sampling technique. Several criteria were set: the respondents were the passengers of the BST corridor I at least in the past six months, and had the ability to read and write appropriately. Data collection technique used questionnaires with a 5 point Likert scale, which were distributed and collected offline and online. The questionnaires were the modification of previous studies [4, 6], consisting of 23 questions.

Data analysis in this study used Structural Equation Modeling (SEM). This method combines Factor Analysis and Path Analysis, enabling further stage to test and estimate the relationship between multiple latent independent variables and multiple latent dependent variables with several indicators, as well as to test models with mediators-moderators, non linear models and errors [22]. The data were analyzed using Lisrel 8.80. Several assumptions must be met prior to SEM analysis concerning with sample size, normal data distribution, outliers, and multicollinearity. The stages in SEM analysis include the formation and development of model specifications, determination of estimation methods, model evaluation, and model modification when required. Mediation variable analysis used Causal Step model developed by Baron and Kenny [23].

3. Results and Discussion

4.1 Description of Respondents

The need for transportation modes to support passenger and freight mobility in Surakarta City increases in line with the population growth rate. The Transportation Office (*Dishub*) of Surakarta City recorded the population density of the city in 2017 was 12,780 people per km^2. Batik Solo Trans (abbreviated BST) is the official mode of transportation provided by the government. The service offered by BST is an intangible one. Nevertheless, the condition of the bus stops and bus fleet is classified the physical evidence or service scape, which must be maintained since it affects the assessment of customer toward public transport company.

The respondents were dominated by female, namely 78 respondents (68%) while there were 37 male respondents (32%). Nevertheless, no specific treatment was given to both genders. The higher percentage of female respondents was due to the higher number of female than male passengers during the data collection hence the questionnaires were mostly distributed to them.

Most respondents aged between 17 to 35, specifically 56.5%. Meanwhile, 28 respondents (24.3%) aged 35 to 50, and 11 respondents (9.6%) aged under 17 and above 50. The collected data were obtained without special treatment for any age groups. Most passengers who were willing to fill out the questionnaire were those aged 17 to 35.

As many as 38 respondents (33%) were private employees, 17 respondents were state employees and higher education students (15%), and 13 respondents were students (11%). Meanwhile, the small percentage of respondents included self-employed (7%), freelance workers (8%), housewives (8%), and others (3%). The number of respondents is in accordance with information published by the BST in which the crowded during peak hours are dominated by employees and students.

Most respondents had a bachelor/diploma education background (48.6%). Furthermore, 39 respondents (34%) had senior secondary educational backgrounds and 11 respondents (9.5%) had master's/doctorate degree, 7 respondents (6.1%) had junior secondary educational background, one respondent (0.9%) had primary educational background, and one respondent had other background.

Table 1. Characteristics of Respondents

	Category	N	%
Gender	Male	37	32.0%
	Female	78	68.0%
Age	Under 17	11	9.6%
	17-35	65	56.5%
	35-50	28	24.3%
	Over 50	11	9.6%
Occupation	Students	13	11.0%
	Higher education students	17	15.0%
	Private employee	38	33.0%
	State employee	17	15.0%
	Self-employed	8	7.0%
	Freelancer	9	8.0%
	Housewife	9	8.0%

Educational background		N	%
	Others	4	3.0%
	Primary education	1	0.9%
	Junior secondary school	7	6.1%
	Senior secondary school	39	34.0%
	Bachelor/diploma	56	48.6%
	Master's/doctorate degree	11	9.5%
	Others	1	0.9%

Table 2. Consumer Behavior toward Public Transportation Modes

Transportation mode	N	%
Online bike taxi	54	38.30%
BST	82	58.16%
Becak/circle rickshaw	2	1.42%
Conventional taxi	2	1.42%
Conventional bike taxi	1	0.71%
Frequency/week		
Once	33	28.70%
Twice to 4 times	46	40.00%
5 times	10	8.70%
> 5 times	26	22.61%
Duration		
<30 min	49	42.61%
30 min - 1 h	61	53.04%
>1 h	5	4.35%

Table 3. Consumer Behavior toward Public Transportation Modes (Continued)

Purpose	N	%
Studying	28	22.95%
Working	46	37.70%
Travelling	27	22.13%
Airport/Terminal/Station	10	8.20%
Others	11	9.02%

BST is the favorite public transportation mode of respondents (58%). It shows that most respondents are fond as well as support the existence of BST services. The second favorite mode is online bike/taxi provided by Grab/Go-Jek, in which such transportation service providers are currently popular due to their affordable fare. Other modes such as *becak*/cycle rickshaw, conventional taxi, and conventional bike taxi, have their own loyal passengers despite of their small percentage (1-2%).

Most respondents (40%) used BST service twice to four times in a week. Furthermore, 29% respondents used the services once in a week, 22% used it more than five times in a week, and 9% used it five times in a week. This condition shows that a high number of passengers use BST services repeatedly. The passengers have travelled with BTS and they relatively have good impression in it.

Most respondents used BST facilities for 30 minutes to 1 hour, namely 53% of respondents. Meanwhile, 43% of respondents were on the BST for less than 30 minutes, while only 4% of respondents were on the BST for more than 1 hour. The variation in duration among respondents occurs due to the differences in distance, traffic condition, and waiting times for the bus fleet.

The majority of respondents travelled with BST for work purposes (38%). In addition, BST was also widely used to go to school or campus (23%) and culinary and shopping (22%). As many as 8% of respondents used it for going to airport, terminal or station, while 9% of respondents preferred BTS for destinations of hospitals, places of worship and others. The largest percentage of work purpose is in line with the data of respondents' occupations, which are dominated by private employees and state employees.

4.2 Measurement Tests

Table 3. Results of Confirmatory Factor Analyses and Reliability Test

Variable	SFL ≥0.30	*t*-value ≥1.96	Error	Reliability		Description
				CR≥0.70	VE≥0.50	
Aesthetics						Reliable
ES1	0.78	9.54	0.39			Good validity
ES2	0.87	11.21	0.24	0.87	0.62	Good validity
ES3	0.75	8.94	0.44			Good validity
ES4	0.74	8.80	0.46			Good validity
Comfort						Reliable
KN1	0.83	10.37	0.31			Good validity
KN2	0.67	7.76	0.55	0.83	0.56	Good validity
KN3	0.77	9.33	0.41			Good validity
KN4	0.71	8.35	0.49			Good validity
Cleanliness						Reliable
KB1	0.71	8.37	0.49			Good validity
KB2	0.80	9.76	0.36	0.85	0.66	Good validity
KB3	0.91	11.72	0.17			Good validity
Layout						Reliable
TL1	0.90	12.20	0.19			Good validity
TL2	0.95	13.46	0.09	0.90	0.76	Good validity
TL3	0.74	9.05	0.45			Good validity
Satisfaction						Reliable
KP1	0.79	9.89	0.38			Good validity
KP2	0.82	10.37	0.33	0.89	0.67	Good validity
KP3	0.87	11.55	0.24			Good validity
KP4	0.80	10.08	0.36			Good validity
Loyalty						Reliable
LY1	0.75	9.28	0.43			Good validity
LY2	0.74	9.11	0.45			Good validity
LY3	0.92	12.52	0.16	0.89	0.62	Good validity
LY4	0.90	12.07	0.20			Good validity
LY5	0.59	6.77	0.65			Good validity

Table 4. Results of Goodness of Fit

	Target of Goodness of Fit	Estimation	Description
CMIN/DF	≤ 5	$\frac{506.07}{221} = 2.289$	Good
CFI	>0.90	0.95	Good
NFI	>0.90	0.92	Good
NNFI	>0.90	0.95	Good
IFI	>0.90	0.95	Good
PNFI	0.60 – 0.90	0.80	Good
RFI	>0.90	0.91	Good
GFI	>0.90	0.72	Less
P-Value	>0.05	0.000	Less
RMSEA	≤ 0.08	0.106	Less

Table 3 demonstrates that all indicators on each variable have good validity as indicated by the Standard Factor Loading (SFL) of > 0.30 and *t*-value is > 1.96. It shows that all indicators can explain the variables well. The reliability of the variables is also good as indicated by the Construct Reliability (CR) is > 0.20 and the Variance Extract (VE) is > 0.50. It reaffirms the reliability of all variables and indicators for further testing models.

The results of the Goodness of Fit are listed in Table 4. It shows that 7 of 10 GFI, namely CMIN / DF, CFI, NFI, NNFI, IFI, PNFI, and RFI result of a good fit. Nevertheless, GFI, RMSEA, and *p*-value show the opposite results. However, since most of them indicate good results hence it can be claimed that in overall, the model shows a good fit.

4.3 Hypothesis Testing

Table 5. Results of Hypthesis Testing

Hypothesis	Variable Relationship	Coefficient	*t*-value	Description
1	Aesthetics → Satisfaction	0.23	4.52	Significant
2	Comfort → Satisfaction	0.20	3.91	Significant
3	Cleanliness → Satisfaction	0.10	2.21	Significant
4	Layout → Satisfaction	0.13	2.83	Significant
5	Aesthetics → Loyalty	0.03	0.53	Not significant
6	Comfort → Loyalty	0.04	0.73	Not significant
7	Cleanliness → Loyalty	-0.06	-1.42	Not significant
8	Layout → Loyalty	-0.07	-1.52	Not significant
9	Satisfaction → Loyalty	0.78	4.78	Significant

Table 5 shows that the dimensions of aesthetics, comfort, cleanliness, and layout have significant

effect on consumer satisfaction. Nevertheless, those dimensions have insignificant effect on consumer

loyalty. Based on the coefficient values in Table 5, the following structural equation models are developed:

(i)   Satisfaction = 0.23 Aesthetics + 0.20 Comfort + 0.10 Cleanliness + 0.13 Layout + e (R²: 0.46)

(ii)   Loyalty = 0.78 Satisfaction + 0.028 Aesthetics + 0.038 Comfort – 0.064 Cleanliness – 0.067 Layout + e (R²: 0.58)

In Equation (i), the coefficient of aesthetic dimension is the highest. It shows that this dimension has the most influence on consumer satisfaction, followed by the dimension of comfort, layout, and cleanliness. In Equation (ii), the highest coefficient value is satisfaction. It shows that consumer satisfaction has the most significant effect on consumer loyalty, followed by the dimension of comfort and aesthetics. The R^2 value in Equation (i) shows that 46% of the variance in consumer satisfaction can be explained by the dimensions of aesthetics, comfort, cleanliness, and layout, while 54% can be attributed to unknown variability. In Equation (ii), the R^2 value indicates that 58% of the variance in consumer loyalty can be explained by aesthetics, comfort, cleanliness, and layout, while the remaining 42% can be attributed to unknown variability.
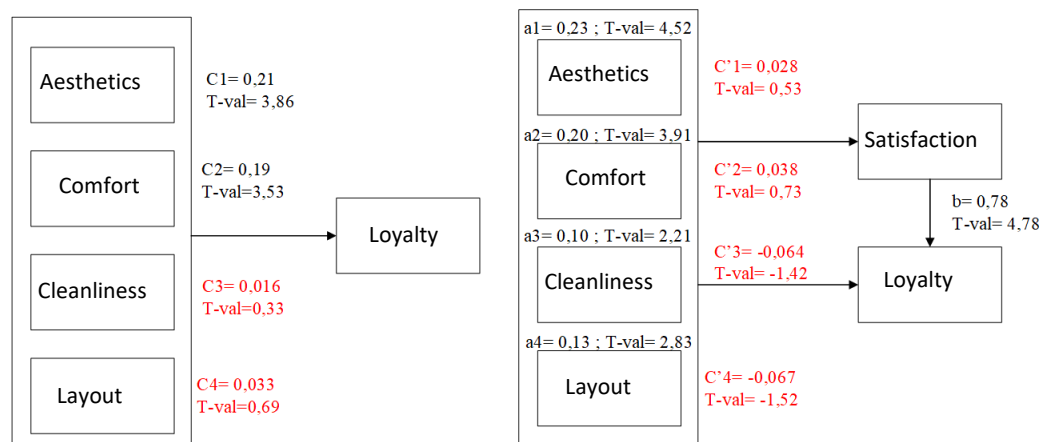

Fig. 2. Results of Mediating Variable Analysis

Fig. 2 shows the results of mediating variable analysis using the Causal Step developed by Baron and Kenny [23]. The criteria for a perfect mediating variable are the significant c-coefficient, the significant a-coefficient, the significant b-coefficient, and the insignificant c-coefficient [23]. According to [21] a variable has mediating effect if it meets the criteria for significant a-coefficient and b-coefficient, even though the c-coefficient is not significant. Based on the criteria, it can be stated that the variable of satisfaction perfectly mediates the aesthetics and comfort on the variable of consumer loyalty, and that satisfaction can be stated to have a mediating effect between the cleanliness and layout on consumer loyalty.

4.4 The Effect of Aesthetics on Consumer Satisfaction and Loyalty

The dimension of aesthetics has a significant effect on the consumer satisfaction toward BST corridor I, as indicated by t-value = 4.52. The coefficient value of aesthetics on satisfaction is positive, implying the higher the aesthetics value, the greater the consumer satisfaction. It can be stated that H1 is statistically supported. The finding of the present study verifies Lee and Kim [6], in which the dimension of aesthetics in service scape is a powerful determinant of consumer satisfaction. The aesthetics of the BST corridor I cover the color, interior design, architectural design, and attractive supporting equipment, which are more tangible than the ambient condition (temperature and lighting). These characteristics create strong stimuli hence the passengers are satisfied with BST services, and ultimately consumer satisfaction is enhanced by the attractiveness of services/facilities.

The dimension of aesthetics has no significant effect on the loyalty of the consumers in using BST corridor I services, as indicated by t-value = 0.53. It can be stated that H5 is not statistically supported. Nevertheless, satisfaction is a perfect mediating role between aesthetics and loyalty. It is evidenced from the analysis of mediating variable that meet all four criteria. This finding reaffirms Hussainy et al. [4], in which customer satisfaction has a mediating effect on the relationship between service scape and loyalty. It can be claimed that the higher the aesthetic value of the BST corridor I facilities, the greater the consumer satisfaction in which it has a positive effect on consumer loyalty.

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4.5 The Effect of Comfort in Supply Chain on Satisfaction and Loyalty

The dimension of comfort has a significant effect on the consumer satisfaction toward BST corridor I (*t*-value = 3.91). The coefficient value of the comfort to satisfaction is positive, indicating the more comfort the BST services/facilities, the greater the consumer satisfaction. It can be stated that H2 is statistically supported. This finding verifies [12], on the positive effect of comfort on consumer satisfaction. The dimension of comfort has a great influence on the passengers' emotional state. The comfort of service scape in BST corridor I include the comfort of seat, standing area, air temperature and lighting. Such comfort will create an indulging experience for passengers hence they will be satisfied with BTS services/facilities.

Furthermore, the dimension of comfort is found to have no significant effect on the loyalty of passenger (*t*-value = 0.73). It can be claimed that H6 is not statistically supported. Nevertheless, satisfaction is a perfect mediating role between comfort and loyalty. It is evidenced from the analysis of mediating variable that meets all four criteria. It supports [4], in which customer satisfaction has mediating effect on the relationship between service scape and loyalty. In overall, it can be stated that the more comfort the BST corridor I facilities, the greater the consumer satisfaction thus it has a positive effect on consumer loyalty.

4.6 The Effect of Cleanliness on Satisfaction and Loyalty

The dimension of cleanliness has a significant effect on consumer satisfaction toward BST corridor I (*t*-value = 2.21). The coefficient value of cleanliness on positive satisfaction is positive, indicating the higher the cleanliness value, the greater the consumer satisfaction. It can be stated that H3 is statistically supported. This finding verifies Lee and Kim [6], on the significant effect on the cleanliness on customer satisfaction. As one of the basic human needs, cleanliness is a significant factor in passenger assessment of BST facilities. The dimension of cleanliness includes the cleanliness of bus fleet, bus stops, and the service in a whole. The hygiene needs of the passenger are fulfilled thus consumer satisfaction is maintained.

Furthermore, the dimension of cleanliness has insignificant effect on the loyalty of BST consumer (*t*-value = -1.42). It can be claimed that H7 is not statistically supported. The effect of cleanliness on consumer loyalty is mediated by the consumer satisfaction. This finding confirms [4], in which customer satisfaction has mediating effect on the relationship between service scape and loyalty. The

higher the cleanliness value of BTS corridor I, the greater the consumer satisfaction thus it has a positive effect on consumer loyalty.

4.7 The Effect of Layout on Satisfaction and Loyalty

The dimension of layout has a significant effect on consumer satisfaction toward BST corridor I (*t*-value = 2.83). The coefficient value of the layout on consumer satisfaction is positive, indicating the better the layout, the greater the consumer satisfaction. It can be claimed that H4 is statistically supported. The finding of this study confirms [14] on the significant impact of layout factor on customer satisfaction. Proper spatial arrangement and property can enhance consumers' comfort and convenience. The dimension of layout covers the access to the bus fleet and bus stops as well as ease of use of BST. The factor of ease of use will enhance consumer satisfaction in using BST.

The dimension of layout has no significant effect on consumer loyalty toward BST corridor I (*t*-value = -1.52). It can be claimed that H8 is not statistically supported. The effect of layout on loyalty is mediated by consumer satisfaction. This finding supports [4], in which customer satisfaction has mediating effect on the relationship between service scape and loyalty. The better the layout of the BST corridor I, the greater the consumer satisfaction hence it has a positive effect on consumer loyalty.

4.8 The Effect of Satisfaction on Loyalty

Satisfaction has a significant effect on consumer loyalty toward BST corridor I (*t*-value = 4.78). It can be claimed that H9 is statistically supported. The finding of this study confirms Chi and Qu and Cronin et al., on a positive relationship between customer satisfaction and loyalty [16, 17]. Moreover, [3] also argued the direct effect of customer satisfaction on loyalty that has been shown to be statistically significant [18]. Satisfaction perceived by consumers of a product/service will lead to customer loyalty and retention [1]. Satisfaction will lead to the intention to reuse, so-called loyal consumers. The coefficient value of the satisfaction variable on loyalty has a positive value, showing the greater the consumer satisfaction, the higher the consumer loyalty to BST services.

4.   Conclusion

The importance of effective supply chain management is becoming more critical for all manufacturing companies as well as service companies. In order to gain competitive advantage

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through effectively applied supply chain management, all service industries seek for new approaches to achieve effective reorganisation, restructuring, reengineering and redesigning applications for the overall industry system processes. Based on the findings of this study, it can be concluded that: 1) Aesthetic dimension (color, interior design, architectural design, and display of supporting equipment); comfort dimension (seat, passenger standing area, air temperature and lighting); cleanliness dimension (bus fleet, bus stop, and overall hygiene); and layout dimension (access to bus fleet and bus stops, ease of use) have a significant effect on passenger satisfaction toward BST corridor I in Surakarta City; 2) These dimensions, however, have no significant effect on the loyalty of passengers in using BST corridor I services; 3) Consumer satisfaction has a significant effect on consumer loyalty; 4) Satisfaction has a mediating effect on the relationship between aesthetics and consumer loyalty, as well as the relationship of comfort and consumer loyalty; 5) Satisfaction mediates the relationship between cleanliness and layout dimensions with consumer loyalty; 6) The dimension of aesthetics has the most significant effect on consumer satisfaction of BST corridor I, followed by the dimension of comfort, layout, and cleanliness, respectively.

5.1 Recommendation

In order to enhance the consumer loyalty on BST corridor I, the management of PT. Batik Solo Trans is recommended to improve and maintain the aesthetic dimension, which includes color display on bus fleets and bus stops, interior design on bus fleets and bus stops, architectural design of the bus stops, and the display of supporting equipment in BST facilities. In fact, the function of supporting equipment of some bus fleets is less optimal and maintained inappropriately. As a consequence, it adversely affects the aesthetic dimension of BST facilities.

It is also recommended for the management of BST corridor I to improve and maintain the comfort of both bus fleet and bus stops. This dimension includes seat, standing area, air temperature (AC), and lighting. This study revealed some passengers were dissatisfied with BTS services in which during peak hours, the passengers were too crowded and the bus fleets are uncomfortable. Furthermore, the attitude and behavior of BTS drivers also affects the comfort of the passenger since careless driving will adversely impact on passenger comfort. The temperature in the bus fleet also becomes a concern especially during the peak hours. The spatial arrangement of bus stops is also less comfort, particularly during rainy days. The

comfort of the bus fleet also entails the music in which the drivers usually play music based on their personal interest and volume.

In addition to the aesthetic and comfort dimensions, the cleanliness of BTS must be improved and maintained. It must be maintained on a regular basis. In fact, the hygiene and cleanliness of some bus stops and bus fleets are inadequate. The layout of BST facilities must be improved as well, particularly its convenience for disabled passengers. In fact, the access for disabled passengers is inadequate, especially when entering and leaving the bus fleet. Bus stops are only equipped with stairs without any special facilities for disabled passengers.

Furthermore, subsequent research is recommended to investigate more by adding the variables. In addition to the effect of service scape, the effect of other factors such as staff and service delivery can be examined simultaneously. The present study can also be applied to other public facilities or institutions to find out the level of consistency thus the variables investigated in this study will be re-evaluated.

5.2 Research Limitation

There are several limitations in this study that can be improved for further research. Despite the discussion about supply chain effect on costumer satisfaction, it has not involved the demographic characteristics of respondents. Differences in age, gender, educational background, and occupation can indicate diverse passenger loyalties towards BTS. The interview method can be added as a complement to the data to find other possible factors that motivate the loyalty of BTS passengers. The present study, however, has not examined the relationship between independent variables in more detail. The independent variables of aesthetics, comfort, cleanliness, and layout may have the possibility of either mutually supportive or non-supportive relationship. The relationship between independent variables can be identified using the SEM method.

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