Public Transport Services and Its Interplay with Users Subjective Well Being (Case Study: Palembang City)

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ABSTRACT

Well-being in the context of transport is measured by considering the impacts of the transport system such as travel time, cost, and environmental quality. Personal experience is starting to be taken into account to measure well-being due to the limitations of GDP to measure economic and social performance. Previous studies have suggested that the quality of transport services used will affect the subjective well-being of its users. However, existing studies have focused on developed countries, and only a few have examined developing countries, especially Indonesia. The development of Palembang City, which is not supported by optimal public transport, creates urban problems that have an impact on people's subjective well-being. There have been many regression studies to evaluate the effect of travel on SWB one by one, and do not consider the possible mediating effects of other variables. Therefore, this study aims to identify the effect of public transport service quality on the subjective well-being of its users in Palembang City. A survey was conducted on 572 samples of BRT Transmusi users in Palembang City to measure their perceptions of BRT Transmusi service quality and their quality of life. The structural equation model (SEM) analysis method was used to measure the effect of the relationship of service variables on the quality of life of BRT Transmusi users because SEM is able to analyse between several dependent and independent variables directly. The results confirm that the quality of public transport services has a positive and significant influence on the satisfaction of Transmusi BRT users. Then, user satisfaction has a positive and significant influence on the life satisfaction of BRT Transmusi users. User satisfaction also acts as a mediator in the relationship between service quality and quality of life of BRT Transmusi users. Although, the relationship occurs indirectly and is not significant. The results of this study suggest that improving the quality of life of commuters in Palembang City can be done by improving the quality of service of BRT Transmusi, such as maintaining the physical condition of the bus to keep it good and modern, providing service training to drivers, and increasing empathy to users.
Keywords: Service Quality, Subjective well-being, Structural Equation Model (SEM), BRT Transmusi, Palembang City.

ABSTRAK

Kesejahteraan dalam konteks transportasi diukur dengan mempertimbangkan dampak dari sistem transportasi seperti waktu tempuh, biaya, serta kualitas lingkungan. Pengalaman pribadi mulai diperhitungkan untuk mengukur kesejahteraan karena keterbatasan PDB untuk mengukur performa ekonomi dan sosial. Berbagai penelitian sebelumnya menyatakan bahwa kualitas layanan transportasi yang digunakan akan mempengaruhi subjective well-being penggunanya. Namun, penelitian yang telah ada berfokus pada negara maju, dan hanya sedikit yang meneliti tentang negara berkembang, terutama Indonesia. Perkembangan Kota Palembang yang tidak didukung oleh transportasi umum yang optimal menimbukan masalah perkotaan yang berdampak pada subjective well-being masyarakat. Telah banyak studi regresi untuk mengevaluasi pengaruh perjalanan terhadap SWB secara satu persatu, dan tidak memperhatikan kemungkinan efek mediasi dari variabel lainnya. Oleh karena itu, penelitian ini bertujuan untuk mengindentifikasi pengaruh kualitas layanan transportasi umum terhadap subjective well-being penggunanya di Kota Palembang. Survey dilakukan terhadap 572 sampel pengguna BRT Transmusi di Kota Palembang untuk mengukur persepsi mereka terhadap kualitas layanan BRT Transmusi dan kualitas kehidupan mereka. Metode analisis structural equation model (SEM) digunakan untuk mengukur pengaruh hubungan variabel-variabel layanan terhadap kualitas hidup pengguna BRT Transmusi karena SEM mampu melakukan analisis di antara beberapa variabel dependen dan independent secara langsung. Hasil penelitian mengkonfirmasi bahwa kualitas layanan transportasi umum memiliki pengaruh positif dan signifikan terhadap kepuasan pengguna BRT Transmusi. Kemudian, kepuasan pengguna memiliki pengaruh positif dan signifikan terhadap kepuasan hidup pengguna BRT Transmusi. Kepuasan pengguna juga berperan sebagai mediator dalam hubungan antara kualitas pelayanan dan kualitas hidup pengguna BRT Transmusi. Walaupun, hubungan tersebut terjadi secara tidak langsung dan tidak signifikan. Hasil penelitian ini menyarakan peningkatan kualitas hidup komuter di Kota Palembang dapat dilakukan dengan cara meningkatkan kualitas layanan BRT Transmusi, seperti menjaga kondisi fisik bus agar tetap baik dan modern, memberikan pelatihan pelayanan kepada pengemudi, dan meningkatkan empati kepada pengguna.
Kata kunci: kualitas pelayanan, subjective well-being, Structural Equation Model (SEM), BRT Transmusi, Kota Palembang

1. INTRODUCTION

The ultimate goal of public policy is to improve people's welfare. In the context of transport, well-being is measured by considering the impacts of the transport system such as travel time and cost, as well as environmental quality. Subsequently, the assessment of transport systems based on personal experience when using transport modes began to be considered (Mokhtarian, 2019). Personal experience is being taken into account due to the limitations of GDP to measure economic and social performance, as well as global interest in measuring and improving people's well-being (OECD, 2011).

Well-being is a multi-dimensional concept that is able to measure objectively and subjectively. Subjective well-being (SWB) is formally defined by the OECD as "a good mental state, including all evaluations that people make of their lives, and reactions to their life experiences" (OECD, 2013). SWB can be measured by evaluating how satisfied a person is with various aspects of their life and life experiences (Tinkler & Hicks, 2011). There have been many studies on transport, travel, wellbeing, and their interconnectedness (Ettema et al., 2010; Mokhtarian, 2019). These studies do not specifically focus on commuting. The relationship between commuting and SWB is different from other trips, such as leisure trips, for various reasons (Chatterjee et al., 2020).

Research on the influence of travel behaviour and *subjective well-being* continues to grow (De Vos, 2019; Ettema et al., 2010; Mokhtarian, 2019). Research by (Friman et al., 2017) found that satisfaction with daily travel directly influenced well-being and life satisfaction together, and that satisfaction was highest among people who travelled daily by walking and cycling and lowest among public transport users. *Cross-sectional* studies consistently show a negative relationship between commuting time and life satisfaction among commuters in Sweden (Olsson et al., 2013), the United States (Choi et al., 2013), and China (Nie & Sousa-Poza, 2018). More specific research addresses the relationship between commuting and SWB, analysing the influence of commuting on specific life domains (Clark et al., 2020; Ingenfeld et al., 2019; Lorenz, 2018). These studies show that long commuting times lead to low satisfaction with leisure and family time, low job satisfaction, and high levels of burnout. Research by (Ingenfeld et al., 2019) specifically states that the adverse effects of long commuting times can cause commuters to feel less life satisfaction. Commuting and SWB also have different relationships in different social groups. Research suggests that women experience a higher decline in SWB (Feng & Boyle, 2014; Jacob et al., 2019), lower leisure time (Wheatley, 2014) than men due to long commuting times. This is due to women's dominant role in the household, low income,

and limited choice of transport modes, as well as voluntary residential displacement due to husband's work (Hirte & Illmann, 2019; Milner et al., 2017).

Theoretically, since commuting is a daily activity, SWB will also be related to the quality of public transport used. User satisfaction with public transport service quality such as cost, travel time, and punctuality is related to SWB. Service quality such as comfort, cleanliness, and safety are also things that affect affective user satisfaction (Shiftan et al., 2015; Li et al., 2018). Therefore, public transport user satisfaction will be related to SWB components (affective & cognitive). Based on a study (OECD, 2016), the average commuting time to work or school in large cities in countries such as Finland, Spain, Sweden, and the United States, is only 20 minutes per day. Meanwhile, in other countries such as Japan and Turkey, commuting time can reach 40 minutes per day. In Korea, commuting time can reach 1 hour every day. Meanwhile, in developing countries, such as Indonesia, it can reach 2 hours every day. Previous research by (Clark et al., 2020) found that longer commute times are associated with lower job satisfaction and leisure time, increased stress, and poorer mental health. A 1% increase in the length of commuting time by workers was associated with a 0.018% and 0.027% increase in sickness absence days in male and female workers, respectively (Gimenez-Nadal et al., 2022). A reduction in travelling costs would increase well-being by about 3.3% (Monte et al., 2018). However, existing research focuses on developed countries, and only a few have examined developing countries, especially Indonesia. In fact, Indonesia as a developing country is experiencing continuous urbanisation.

The development of Palembang City into a metropolitan city is caused by urbanisation and the development of industrial centres. However, the development of the city that is not supported by optimal public transport will cause urban problems, such as congestion and decreased air quality, which will also have an impact on people's SWB and should be further researched (Qiu et al., 2019; Imelda et al., 2020). Bochari's (2022) study highlights that although numerous studies have examined public transportation and subjective well-being (SWB), few have considered the relationship between the two from the Just City perspective. This gap is particularly significant in countries with unequal access to services, as is often the case in developing nations. Subjective well-being (SWB) has become an important focus in transportation studies, with many researchers emphasizing the link between transport service quality and users' well-being. In developed countries, studies have shown that comfort, reliability, and accessibility of public transportation services positively contribute to users' SWB (Mogaji et al., 2021). However, in developing countries, such research remains limited,

especially in the context of Bus Rapid Transit (BRT) systems, which are increasingly popular as a mass transit solution. Palembang, as one of Indonesia's major cities, has implemented a BRT system to address transportation issues. Nevertheless, few studies have explored the impact of BRT services on users' SWB in the city. This study seeks to fill that gap by analyzing how BRT service quality affects the SWB of users in Palembang. There have been many studies explaining the influence of commuting on SWB (St-Louis et al., 2014; Sun et al., 2022; Zhu & Fan, 2018). However, these studies still have limitations. Most studies use regression methods to evaluate the effect of travel on SWB individually, and do not consider the possible mediating effects of other variables. In addition, research still focuses on cities in developing countries and there are still few studies that discuss cities in developing countries. Therefore, this study was conducted to answer the extent of the relationship between the quality of public transport services to the SWB of the Palembang City community using the *Structural Equation Modelling* (SEM) method.

2. LITERATURE REVIEW

This research focuses on user satisfaction. User satisfaction can be defined as an assessment of the conformity of expectations and performance after using a product or service (Oliver, 1980). In the context of public transport, user satisfaction is related to several service quality attributions, such as cleanliness, comfort, safety, cost, travel time, and punctuality (Ettema et al., 2010; Shiftan et al., 2015; Li et al., 2018). Incidents and experiences experienced by public transport users can also shape user satisfaction (Friman et al., 2022). Service quality measurements developed by (A. P. Parasuraman et al., 1988) have often been used in many studies with different contexts, such as tourism (Fick and Brent Ritchie, 1991), aviation (Tsaur et al., 2002), and so on. This research adopts the dimensions of service quality and is adapted to the context of BRT Transmusi, including the physical condition of the vehicle, the service quality of the bus driver, the empathy of the service provider (Munim & Noor, 2020a). In the next sub-section, researchers argue about the relationship between the three dimensions of service quality and user satisfaction, as well as the relationship between user satisfaction and SWB.

2.1. Bus physical condition and user satisfaction

Physical conditions relate to the layout, environment and facilities provided by public transport services, such as equipment, crew appearance, communication tools (Parasuraman et al., 1988).The assessment of physical conditions in the context of buses relates to the quality of the physical condition of the bus, cleanliness, cooling system, audio system as a means of

notification at stops and other information from the staff (Jomnonkwao & Ratanavaraha, 2016). The availability of safety equipment, such as Light Fire Extinguishers (APAR) and glass breaking hammers, is important in providing a sense of security to users. The availability of services for users with special needs, such as strollers and wheelchairs, is also important. Previous research by (Morton et al., 2016) proved that the physical condition of buses assessed by cleanliness, comfort, security, and safety, has a positive influence on user satisfaction. Therefore, the researcher hypothesised that:

H1: The physical condition of the bus has a positive effect on the satisfaction of Transmusi BRT users.

2.2. Bus driver service quality and user satisfaction

Bus drivers play an important role in shaping passengers' feelings of comfort and safety. Reliable and friendly bus drivers can shape different user satisfaction (Hensher et al., 2003). Previous research by (Wen et al., 2005) assessed service quality using four factors with one of them being driver attitude. In the study, the driver's attitude was measured by six indicators including a clean and tidy appearance, polite and friendly attitude, able to master emergency conditions, not ignoring users and actively providing services. From the results of this study, it is known that service quality has a positive effect on customer satisfaction. Another study also stated that attitude, driving ability, smoking habits, and driver experience affect bus users' expectations and satisfaction (Jomnonkwao & Ratanavaraha, 2016). Therefore, the researcher hypothesised that:

H2: The quality of service of bus drivers has a positive effect on the satisfaction of Transmusi BRT users.

2.3. Service provider empathy and user satisfaction

Empathy is a key motivating factor for customers to use products or services in every industry. In the context of service providers, empathy can be defined as a service element to provide customised and specialised treatment, as well as care to make customers feel valued (Bloemer et al., 1999). Previous research in several fields, such as aviation and railways, states that empathy (measured by employee service and understanding of customer needs) has a positive effect on customer satisfaction (Johnson et al., 2001). In the context of bus services, (Sam et al., 2018) found that empathy has a positive effect on user satisfaction. Therefore, the researcher hypothesised that :

H3: Empathy from service providers has a positive effect on Transmusi BRT user satisfaction.

2.4. User satisfaction and *Subjective Well-Being*

Life satisfaction is a cognitive judgement about how satisfied one's life is in a certain period (De Vos & Witlox, 2017). De Vos, (2019) states that satisfaction with a trip affects life satisfaction, either directly or indirectly. The relationship between trip satisfaction and life satisfaction can be explained by good travelling activities and the sense of well-being that people receive (Diener, 2000). Poor travel quality can also lead to poor life satisfaction if it occurs continuously. Cognitive SWB is measured using the *Satisfaction with Life Scale* (SWLS) (Diener et al., 1985). Therefore, the researcher hypothesised that :

H4: User satisfaction has a positive effect on *Subjective Well-Being of* Transmusi BRT Users.

Based on the explanations and hypotheses that have been explained, the conceptual framework of this study can be seen in **Figure 1**.
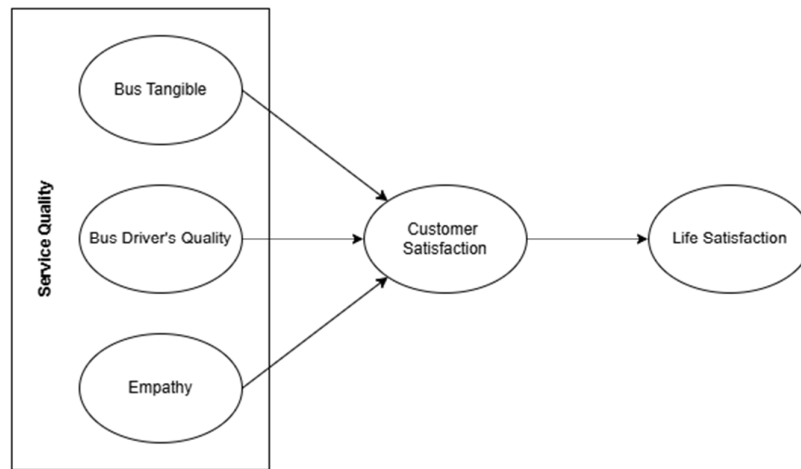
Figure1 . Conceptual Model

3.   RESEARCH METHODS

3.1. *Structural equation model*

To measure the relationship between service quality and SWB of BRT Transmusi users in Palembang City, this study uses a quantitative research framework. The relationship between service quality and user SWB was measured using the *Structural Equation Model* (SEM) analysis method. SEM is an analytical technique that is useful for analysing the pattern of relationships between latent variables and their indicators, latent variables and other latent variables, and direct measurement error. SEM can perform analyses among several dependent and independent variables directly. *Structural Equation Modeling* (SEM) is a powerful analytical technique. This is because SEM considers interaction modelling, nonlinearity, correlated *independent* variables, measurement errors, correlated *error terms*, *multiple latent*

independent variables measured using multiple indicators at once (Sarstedt et al., 2017). The reason researchers use the *structural equation modelling* (SEM) analysis method is because by using SEM researchers are able to describe the pattern of relationships between latent variables and manifest variables or indicator variables.

The measurement of the cognitive component of travel is measured with reference to the general quality and efficiency of transport services. This study will measure the effect of service quality on the cognitive component of SWB using the SWLS measurement. SWLS measurement is measured based on respondents' answers using a scale of 1 (strongly disagree) to 7 (strongly agree) to five statements as follows: In many ways, my current life is close to my goals; My living conditions seem very good; I am satisfied with my life; So far, I have got the important things I want in my life; If I could repeat my life again, I would not change anything. Higher measurement results describe higher SWB (Ettema et al., 2011). Then, this study uses the SERVQUAL framework to measure the quality of public transport services. SERVQUAL is a multi-item instrument to measure service quality. This instrument was developed by (A. Parasuraman et al., 1985) to measure service quality. This research adopts the SERVQUAL dimensions and is adapted to the context of BRT Transmusi including the physical condition of the vehicle, the quality of service of the bus driver, empathy from the service provider (Munim & Noor, 2020).

Table1 . Research Variables

| Variables	Indicator	Code
physical condition of the bus	Modern physical condition of the bus	TA1
	Neat and clean condition of the bus	TA2
	No noise from the engine when in the bus	TA3
	Air conditioning that works well	TA4
	Bus audio system that works well	TA5
	Availability of safety equipment complete with instruction signs	TA6
	Catering for special needs users (e.g. users with wheelchairs, prams)	TA7
Driver service quality	Bus drivers with good driving skills	BD1
	Good bus driver appearance	BD2
	Friendly, helpful and courteous customer service from the driver	BD3
	Effective and correct emergency management	BD4
	Timely departure and arrival schedules	EMP1
	Availability of adequate bus routes	EMP2

Variables	Indicator	Code
Empathy from the service provider	Provision of a compensation scheme in the event of loss or harm	EMP3
	Services provided when passengers get on and off the bus	EMP4
User satisfaction	My satisfaction with the bus service has increased	CS1
	My impression of this bus service has improved	CS2
	I now have a more positive attitude towards this bus service	CS3
Subjective well-being	In many ways, my current life is already close to my ideals	LS1
	My living conditions seem very good	LS2
	I am satisfied with my life	LS3
	So far, I have got the important things I wanted in my life	LS4
	If I could redo my life again, I wouldn't change a thing	LS5

This research was conducted by collecting primary data through distributing questionnaires. In this study, respondents were BRT Transmusi users in Palembang City. The approach used is *accidental sampling* which is a sampling technique based on unexpected events, anyone who is a BRT Transmusi user who is encountered during the research will become a research sample (Sugiyono, 2016). The method of determining the sample size in this study uses the Isaac and Michael formula (Issac & W.B Michael, 1981) to calculate the sample size of the 1.6 million population in Palembang City in 2022. In this study, using an error rate of 5% with a degree of freedom of 1%. Based on the formula above, the minimum sample size of this research is 384 samples. By using a 5% error rate, it can be ensured that the level of bias in this study is low and the number of samples used can represent BRT users in Palembang City.

3.2. Characteristics of Transmusi BRT Users

Data collection on the perceptions of BRT Transmusi users used questionnaires distributed around the BRT Transmusi route. There are nine Transmusi BRT service corridors in Palembang City. BRT Transmusi service routes have been spread throughout all sub-districts in Palembang City, but there are still several villages that have not been served by routes and bus stops. There are at least 200 units of transmusi bus stops in damaged condition due to vandalism and lack of maintenance. This condition certainly affects the comfort of BRT Transmusi users in Palembang City (Agustien, 2020).
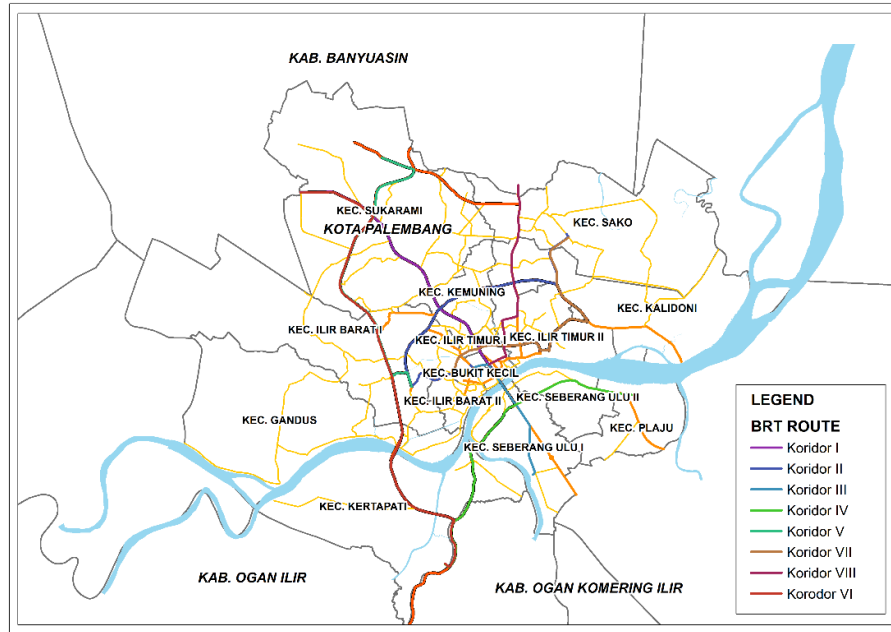
Figure 2. BRT Transmusi route

Based on the results of primary data collection through questionnaire distribution, a total of 580 users filled out the research questionnaire. After the respondent data is obtained, the data must be processed first before further analysis. To ensure the integrity and accuracy of the survey results, it is important to review the data from the aspects of integrity and accuracy.

3.2.1. Integrity check

The integrity check was basically to review whether the questionnaire questions were answered completely and without omissions in the filling process, as well as eliminating answers that were not fully filled in. After checking, 572 acceptable answers were obtained.

3.2.2. Accuracy check

Accuracy checking aims to review whether the data obtained is consistent with the existing conditions, and review whether the data collected is wrong. In this check, researchers looked at whether the data made sense, whether there were contradictions, and excluded answers that were filled in randomly or filled in incorrectly intentionally by respondents. After checking, 564 qualified answers were obtained and could be analysed. The demographic conditions and travel patterns of respondents can be seen in Table 2.

Table2 . Respondent Profile

Characteristics	Category	Number (person)	Percentage (%)
Gender	Male	272	48%
	Female	292	52%
Age	15-29	282	50%
	30-39	169	30%
	40-49	85	15%
	50-51	28	5%

Characteristics	Category	Number (person)	Percentage (%)
Education	SMP	85	15%
	HIGH SCHOOL	282	50%
	S1	169	30%
	S2	28	5%
Trip Frequency Using Public Transport	1 Trip	141	25%
	2 Trip	226	40%
	3 Trip	85	15%
	4 Trip	102	18%
	5 Trip	10	2%
Purpose of Travel	Go to school	214	38%
	Work	175	31%
	Shopping	85	15%
	Travelling	17	3%
	Visiting Family	17	3%
	Courses	51	9%
	Miscellaneous	5	1%

The sample results show a balanced use of BRT Transmusi between gender groups, namely 48% male and 52% female. At the education level, the majority of respondents' education level is senior high school. Then, the majority of respondents used BRT Transmusi for 2 trips with the purpose of travelling to school and work.

3.3. Measurement Model

The measurement model is a prerequisite in SEM analysis, which measures the relationship between indicators and latent variables. As shown in Figure 1, the concept model consists of five latent variables, which cannot be measured by only one indicator. Therefore, we use multiple indicators to measure each latent variable in the concept model.

3.3.1. Reliability and validity test

The data used to measure the relationship between indicators and latent variables are obtained from the questionnaire results. All indicators are measured on a 7 Likert scale, where 7 indicates strongly agree with the statement, and 1 indicates strongly disagree with the statement. Reliability refers to the degree of consistency of results if the same method is used repeatedly. The alpha reliability coefficient method is commonly used to analyse reliability. Cronbach's alpha reliability coefficient is the most commonly used reliability coefficient today. If the reliability coefficient of a scale is above 0.80, it indicates good reliability of the measure. If the scale reliability coefficient is between 0.70 and 0.80, the results are in the acceptable range. If the reliability coefficient is below 0.60, it should be considered to revise or delete measurement items (DeVellis, 2017). Cronbach's alpha reliability coefficient is used to measure

variable reliability. The reliability test results, where the Cronbach's alpha reliability coefficient is above 0.80 which indicates the scale has good internal consistency.

The concept of validity and convergence validity of each variable is to test the validation of the questionnaire. Then, Composite Reliablity (CR) and Average Variance Extracted (AVE) testing was carried out to test the validity of convergence. The test results show the CR value of each latent variable is above 0.7; and the AVE value of each latent variable is above 0.5, indicating that the questionnaire has good validity convergence. A summary of the reliability and validity test results can be seen in table 3. Furthermore, the measurement model in SEMPLS has a good model fit as indicated by the Standardised Root Mean Square Residual (SRMR) value of 0.071, which is less than 0.08 (Hu & Bentler, 1998).

Table3 . Reliability and validity test

Variables and indicators		Loading Factor	Mean	Standard deviation	P
Tangible (TA, alpha: 0.974, CR: 0.978; AVE: 0.865)					
TA1	Modern physical condition of the bus	0.929	3.783	1.102	***
TA2	Neat and clean condition of the bus	0.930	4.087	1.1	***
TA3	No noise from the engine when in the bus	0.958	4.043	1.301	***
TA4	Air conditioning that works well	0.900	4	1.022	***
TA5	Bus audio system that works well	0.969	4.174	1.239	***
TA6	Availability of safety equipment complete with instruction signs	0.924	4.174	0.916	***
TA7	Catering for special needs users (e.g. users with wheelchairs, prams)	0.897	4.043	0.999	***
Bus Driver's Quality (BD: Alpha: 0.967; CR: 0.976; AVE: 0.909)					
BD1	Bus drivers with good driving skills	0.960	4.261	1.259	***
BD2	Good bus driver appearance	0.962	4.696	1.081	***
BD3	Friendly, helpful and courteous customer service from the driver	0.941	4.217	1.317	***
BD4	Effective and correct emergency management	0.950	4.478	1.281	***
Empathy (EMP, alpha: 0.966; CR: 0.950, AVE: 0.909)					
EMP1	Timely departure and arrival schedules	0.963	4.739	0.792	***
EMP2	Availability of adequate bus routes	0.983	4.783	0.832	***
EMP3	Provision of a compensation scheme in the event of loss or harm	0.925	4.826	0.916	***
EMP4	Services provided when passengers get on and off the bus	0.941	4.739	0.674	***
Customer Satisfaction (CS, alpha: 0.974; CR: 0.983, AVE: 0.950)					
CS1	My satisfaction with the bus service has increased	0.960	5.087	0.974	***
CS2	My impression of this bus service has improved	0.983	5.13	1.115	***
CS3	I now have a more positive attitude towards this bus service	0.981	5.13	1.076	***
Life Satisfaction (LS, alpha: 0.969; CR: 0.976, AVE: 0.891)					
LS1	In many ways, my current life is already close to my ideals	0.957	5.957	0.999	***
LS2	My living conditions seem very good	0.940	6	0.885	***

	Variables and indicators	Loading Factor	Mean	Standard deviation	P
LS3	I am satisfied with my life	0.949	5.739	1.072	***
LS4	So far, I have got the important things I wanted in my life	0.959	5.87	0.991	***
LS5	If I could redo my life again, I wouldn't change a thing	0.916	5.783	0.832	***

4. RESULTS AND DISCUSSION

This section will explain the results of the structural model that describes the quality of service on the SWB of BRT Transmusi users by describing the results of the hypothesis and comparing the results of this study with previous research. The following is an overview of the structural model in this study.
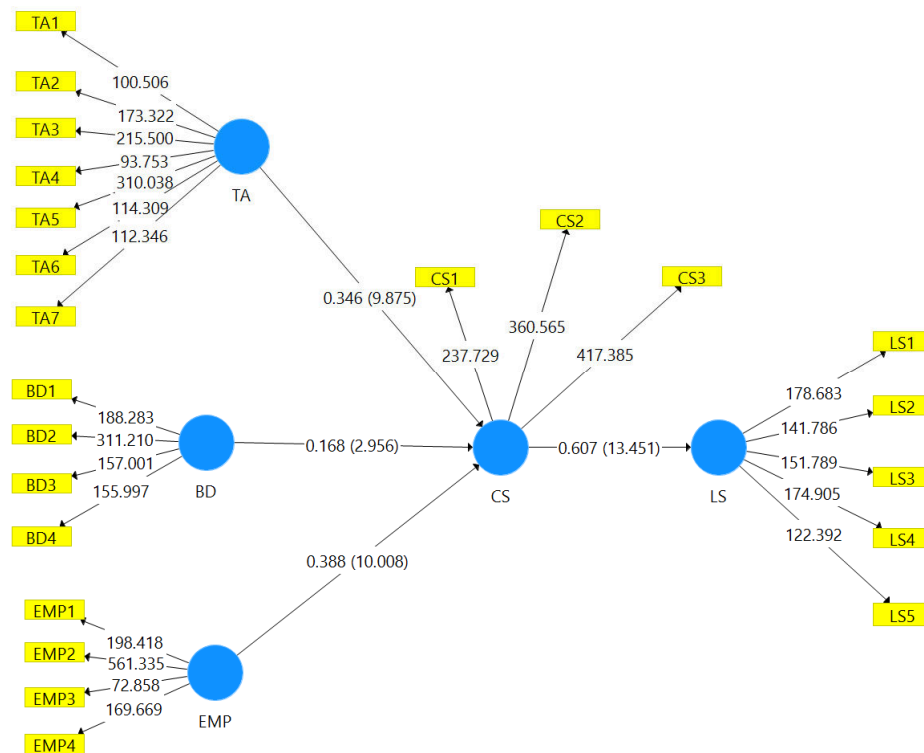

Figure2 . SEM Measurement

Based on the structural path diagram above, it shows the relationship model of the influence of service quality and SWB of BRT Transmusi users. The structural path diagram explains the relationship between latent variables that affect others from the 4 latent variables used in this study. The following is a hypothesis interpretation of the variables and indicators in the path diagram model to identify factors that influence the SWB of BRT Transmusi users.

1. The modern physical condition of the bus affects the satisfaction of Transmusi BRT users positively and significantly;

Based on the results of hypothesis 1 which is accepted from the *t-value* and *p-value*, it is shown that the physical condition of the bus affects the satisfaction of Transmusi BRT users positively and significantly. This is in line with the results of previous research by (Morton et al., 2016; Li et al., 2018; Munim & Noor, 2020b) which states that an increase of 9.875 units of modern bus physical conditions affects user satisfaction.

2. Driver service quality affects Transmusi BRT user satisfaction positively and significantly;

   Based on the results of hypothesis 2 which is accepted from the *t-value* and *p-value*, it is shown that the quality of driver service affects the satisfaction of Transmusi BRT users positively and significantly. This is in line with the results of previous research by (Jomnonkwao & Ratanavaraha, 2016) which states that an increase of 2.956 units of driver service quality affects user satisfaction.

3. Empathy from service providers affects Transmusi BRT user satisfaction positively and significantly;

   Based on the results of hypothesis 3 which is accepted from the *t-value* and *p-value*, it is shown that empathy from service providers affects the satisfaction of BRT Transmusi users positively and significantly. This is in line with the results of previous research by (Sam et al., 2018) which states that an increase of 10.008 units of empathy from service providers affects the satisfaction of BRT Transmusi users.

4. User satisfaction affects SWB BRT Transmusi positively and significantly;

   Based on the results of hypothesis 4 which is accepted from the *t-value* and *p-value*, it is shown that user satisfaction affects the SWB of BRT Transmusi users positively and significantly. This is in line with the results of previous research by (Munim & Noor, 2020b) which states that an increase of 13.451 units of user satisfaction affects the SWB of BRT Transmusi users.

Table 4 . Summary of hypothesis testing

Hypothesis	Path Coefficient	T Value	Description
H1 : Tangible -> Customer Satisfaction	0.345***	9.875	Accepted
H2 : Bus Driver -> Customer Satisfaction	0.168***	2.956	Accepted
H3 : Empathy -> Customer Satisfaction	0.388***	10.008	Accepted
H4 : Customer Satisfaction -> Life Satisfaction	0.607***	13.451	Accepted
indirect/mediation effects			
Bus Driver -> Life Satisfaction	0.102***	2.796	Complimentary mediation
Empathy -> Life Satisfaction	0.235***	8.391	Complimentary mediation
Tangible -> Life Satisfaction	0.209***	7.274	Complimentary mediation

Standard error ***$p < 0.001$

The results of SEM testing using the smartPLS 3 application prove that the four research hypotheses can be accepted. The test results indicate that improvements in the quality of service of bus drivers, the physical condition of the bus, and empathy from service providers will have a positive influence on user satisfaction. An increase in user satisfaction also positively affects the SWB of BRT Transmusi users. Then, user satisfaction has a mediating role in the relationship between the physical condition of the bus, the quality of service of the driver, the empathy of the service provider with the SWB of BRT Transmusi users.

The mediating role of user satisfaction between service quality and SWB suggests that service quality is a prerequisite for improving the well-being of BRT Transmusi users. Good service quality can create a positive commuting experience, and reduce stress (Zhang et al., 2019). However, the realisation of the benefits of increasing SWB is inseparable from the socio-economic context of users. This causes improvements in the quality of BRT Transmusi services to not be felt equally by all social groups. Users with lower incomes may have lower satisfaction thresholds due to limited alternative modes of transport especially in areas not served by public transport, so that improvements in BRT service quality have a more significant impact on their SWB (Lucas, 2012). Meanwhile, other marginalised groups such as the elderly or people with disabilities may not be able to utilise BRT Transmusi services optimally due to non-inclusive infrastructure or the unavailability of special facilities, so that their SWB remains low (Tiznado-Aitken et al., 2018).

The findings of this study indicate that the quality of BRT Transmusi services—specifically in terms of bus physical conditions, driver service quality, and service provider empathy significantly contributes to user satisfaction and, subsequently, to users' subjective well-being (SWB). These findings align with the study by Bokhari and Sharifi (2022), which emphasizes the importance of creating a public transportation system that is responsive to the needs of vulnerable groups, where user satisfaction serves as a key indicator for evaluating transport service success from a Just City perspective. Furthermore, Mogaji and Nguyen (2021) highlight that perceptions of transport service quality greatly influence users' well-being, particularly in developing cities where infrastructure inequalities persist. Delbosc and Currie (2011) demonstrate that satisfaction with public transport strongly correlates with a sense of control and quality of life, especially for users without alternative modes of transport. In this context, the current study reinforces the argument that improving the quality of BRT Transmusi services has a tangible impact on users' psychological and emotional well-being. Moreover, Venter et al. (2020) remind us that the social benefits of public transport cannot be separated from socio-economic factors and spatial accessibility; in other words, groups with limited access or special needs still face barriers in deriving full benefits from BRT services. Therefore, while service quality plays a crucial role in enhancing SWB, its impact remains uneven across social groups, underscoring the need for a more inclusive and equitable approach to transportation planning.

5. CONCLUSIONS

Using data on public transport users' perceptions, this study attempts to identify the influence of service quality on SWB of Transmusi BRT users in Palembang City. This study found that the modern physical condition of the bus, the quality of driver service, and empathy from the service provider have a positive and significant influence on user satisfaction. Then, user satisfaction has a positive and significant influence on the SWB of BRT Transmusi users. This study also found that user satisfaction acts as a mediator in the influence of public transport service variables (modern bus physical conditions, driver service quality, and empathy from service providers) on the SWB of BRT Transmusi users. Although, the relationship of the four variables to user SWB occurs indirectly and is not significant.

Commuting activities that are carried out every day will certainly affect the quality of life of commuters in Palembang City. The quality of Transmusi BRT service plays an important role in improving the quality of life of commuters in Palembang City. A decrease in quality of life will lead to a decrease in worker productivity in Palembang City and have an impact on economic sustainability. The results of this study suggest that improving the quality of life of commuters in Palembang City can be done by improving the quality of service of BRT Transmusi, such as maintaining the physical condition of the bus to keep it good and modern, providing service training to drivers, and increasing empathy to users.

This research relies on primary data related to BRT users' perceptions in measuring the effect of service quality on SWB. In its measurement, this study does not consider the travel patterns of respondents who use various modes to travel other than BRT Transmusi. Multi-modal use has the potential to generate more stress than using only one mode, as a consequence of switching modes. Future research is recommended to examine how variations in travel behaviour can affect the SWB of BRT Transmusi users. In addition, this study also did not consider factors before and after using BRT Transmusi that might affect users' SWB during measurement, such as access to BRT Transmusi and the quality of BRT Transmusi feeder services to and/or from the place of origin.

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