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RESILIENCY FRAMEWORK OF COMMUTERS IN DAVAO CITY

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ABSTRACT

Resiliency during public transportation commutes is an essential factor for the residents of Davao City who experience the long and arduous journeys of city traffic daily. This study aimed to identify the factors that made the commuters in Davao City resilient despite the day-to-day hassle of commuting, as well as the development of a framework utilizing an Exploratory Factor Analysis (EFA) technique. The study locale is in Davao City where 150 daily commuters from around the city were taken as sample respondents. The researchers used a questionnaire as a tool for gathering data. The rotated component matrix discarded 17 items out of 30 and categorized the 13 remaining items into three dimensions. The factors that made the commuters in Davao City resilient were revealed in three varied aspects: self-induced recreation, readiness, and endurance. A Commuters' Resiliency Framework was then developed.

INTRODUCTION

Common commuter problems in the Philippines include poor public transportation system, expensive fares, traffic jams, long queues, and many others that affect even the health of the commuter. Enduring long travel duration, especially during rush hours, while being stuck in traffic jams relay health issues due to air pollution and commuting stress, and economic loss due to tardiness at work. Thus, this developed a commuting culture that manifests three values of Filipino commuters: endurance, crab mentality, and being overly tolerant of adversity (Fallaria, de Jesus, Carpio, Jacinto, De Leon, Agapito, & Ramos 2019).

The morning and evening commuting routine has taken billions of hours in a person's life annually. Not to mention its inklings on how businesses run and its impacts on a person's physical and psychological well-being (Koslowsky, Kluger & Reich, 2013). The mood of commuters during the travel period is lower than in other diurnal activities. Traffic jams, massive commuters, and unforeseen circumstances instigate stress to commuters (Chatterjee, Chng, Clark, Davis, De Vos, Ettema, Handy, Martin, & Reardon, 2020).

Commuting may have been tedious and intolerable, but it is the economical way to get to the workplace, school, and other within-city destinations. Commuters were left with no option but to bear with it. Nonetheless, only the government can provide solutions to alleviate these seemingly hopeless commuting conditions. Despite the downsides of public commuting, Filipinos must embrace these common commuting problems and develop practical tactics to endure them (Pagkatotohan, 2022).

OBJECTIVES

The purpose of the study is to uncover the factors that determine the resiliency of commuters in Davao City, Philippines. These factors were then analyzed and used to develop a framework that can further describe the resiliency of commuters despite the hassle and bustle of a daily commute.

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METHODOLOGY

The study locale is in Davao City and 150 commuters were randomly selected as sample respondents. The respondents were asked to fill in a questionnaire that served as the research instrument for the data gathering. The questionnaire was presented to an examiner to evaluate and validate its contents.

The researchers used Exploratory Factor Analysis (EFA) for the study. It was used to identify the factors of resiliency among commuters in Davao City. EFA is a compound multivariate statistical method that involves various linear and sequential steps, it is appropriately used for scale building and when there is a limited theoretical basis for identifying the number and patterns of common factors (Taherdoost, Sahibuddin, & Jalaliyoon, 2022). To test the magnitude of partial correlations among variables, the Keiser Meye-Olkin (KMO) measure of sampling adequacy was performed. The Bartlett's test of sphericity was conducted to identify the identity of the correlation matrix. The scree plot graphically illustrated the factors that made up resilience among commuters in Davao City.

RESULTS AND DISCUSSION

This section exhibits the analysis and interpretation of the gathered data.

KMO AND BARTLETT'S TEST. Shown in the table below is the KMO Measure of Sampling Adequacy and Bartlett's Test of Sphericity. The KMO measures .685 which implies that the samples are in high correlations, that is appropriate for variable analysis that fits the data. As shown, the Bartlett's test of Sphericity yields a value of 1176.733 and a level of significance smaller than .001 which signifies the suitability of the data to be processed to factor the resiliency of Davao City commuters. Moreover, Bartlett's test of Sphericity implies to reject the null hypothesis, and conclude that there are determinants for the resiliency of commuters in Davao City.

Table 1. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.685
Bartlett's Test of Sphericity	Approx. Chi-Square	1176.733
	df.	435
	Sig.	**.000**

SCREE PLOT. Figure 1 illustrates the graphical representation of the total variance explained and the graph of the Eigen values against all the factors. It shows the gradual trailing of the Eigen values and identifies the relative fit of each component based on its relative importance. The graph is particularly useful for determining how many factors will be retained. The point of interest is where the curve flattens. As observed, the curve gets flatter as it reaches component number 12 since it is where the Eigen value less than 1 begins. If the items of each dimension are less than minimum, the dimension will be discarded. Thus, only three factors considered as determinants were retained.
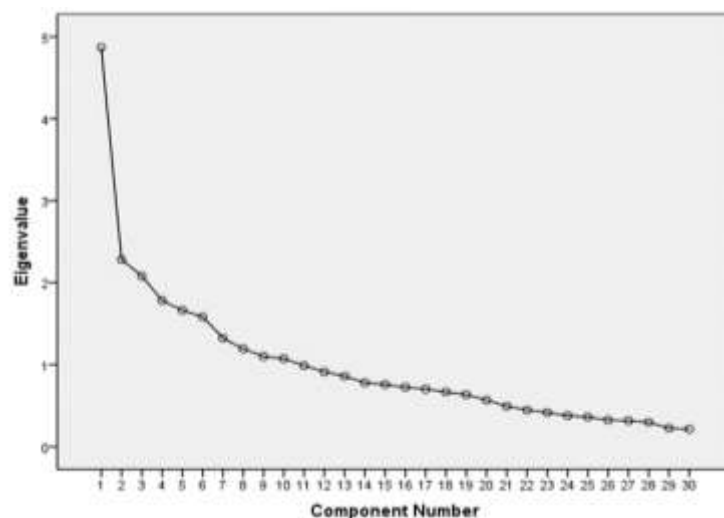

Figure 1. Scree Plot

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COMPONENT MATRIX

Table 2. Rotated component matrix with grouped attributes of "Self-induced Recreation"

Factor	*Attributes*	*Loadings*
SELF-INDUCED RECREATION	9. I open my social media during my daily commute.	0.832
	8. I listen to music or watch videos to help cope with traffic during my daily commute.	0.73
	10. I text or chat with family members or friends during my daily commute.	0.692
	12. I play games on my cellular phone to forget the traffic during my commute.	0.672

The first factor of commuters' resiliency was attributed to self-induced recreation as shown in Table 2. Commuters tend to distract themselves from the hardships of the daily commute. They divert their attention to worthwhile activities as coping strategies during commute (Fallaria, etc.al, 2019). Nonetheless, social recreation can have positive effects and hinder stress and weariness (Olsson, Gärling, Ettema, Friman, & Fujii, 2013).

Table 3. Rotated component matrix with grouped attributes of "Readiness"

Factor	*Attributes*	*Loadings*
READINESS	14. I bring food to alleviate hunger during long hours in my commute.	0.662
	24. I stretch my legs to avoid cramping during my daily commute.	0.657
	13. I drink water to reduce my thirst when stuck in heavy traffic during my commute.	0.604
	23. I pray for safety in silence during my daily commute.	0.579
	29. I talk to fellow commuters to entertain myself during my commute.	0.555

Aware of the rush hours and possible delays due to traffic, a commuter can practice being precautious. Thus, commuting stress can be alleviated with preparations the day or night before (Kowslowsky, et. al., 2013). Attributes shown in Table 3 relate to the second factor of commuters' resiliency called readiness.

Readiness for the long and agonizing commute makes commuters resilient. When traveling to and from the workplace, it is important to always get ready by packing up some light snacks and water as this will prevent hunger and dehydration during the travel time (Pagkatotohan, 2022). Moreover, other attributes that make these commuters resilient is having positive Filipino attitudes which are often described as friendly, religious, and good-natured (Hays, 2015).

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Table 4. Rotated component matrix with grouped attributes of "Endurance"

Factor	Attributes	Loadings
ENDURANCE	1. I am patient in queuing when I arrive at the picking points during my commute.	0.62
	6. I can sit in cramped conditions during my daily commute.	0.572
	5. I maintain a positive attitude during my commute, even when faced with delays or difficulties.	0.571
	28. I stay silent during my commute.	0.51

Commuters' cheerfulness is inversely related to their commute duration (Zhu & Fan, 2018). The attributes shown in Table 4 were classified as a factor called endurance. Patience, endurance, and consideration are just some of the abilities that were developed by many Filipino commuters while commuting (Dancel 2016). These attitudes also illustrate affirmative Filipino Values (Fallaria, etc.al, 2019). Indeed, these adaptive characteristics of commuters have made them resilient to commuting problems in the city.

STUDY FRAMEWORK

Presented in Figure 2 is the Resiliency Framework of Commuters in Davao City. This was developed based on the findings of the researchers that the determinants of commuters' resiliency are self-induced recreation, readiness, and endurance.
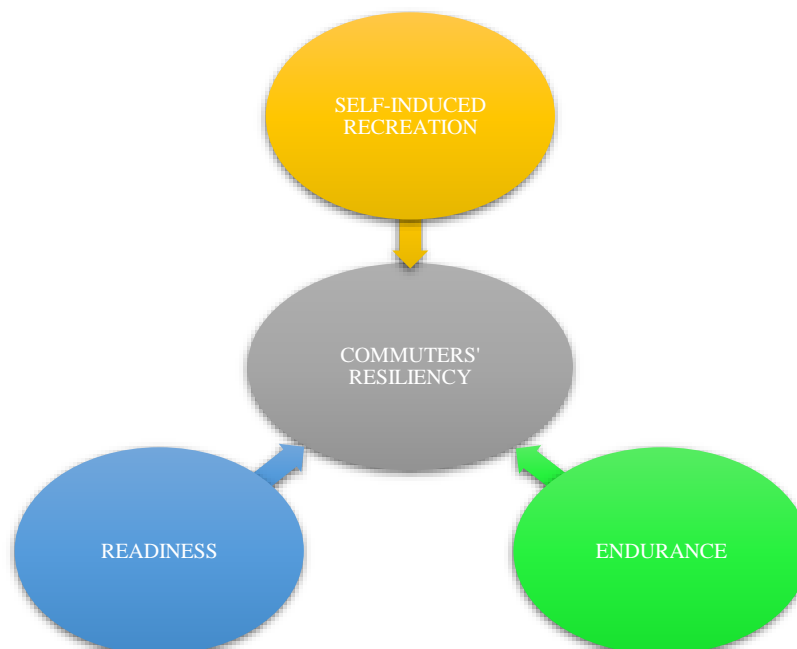

Figure 2. Resiliency Framework of Commuters in Davao City

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CONCLUSION

Based on the findings, the researchers concluded that there are three (3) factors that made the commuters in Davao City resilient namely self-induced recreation, readiness, and endurance. The hassle and stress of the day and night commuting experience of Filipino commuters made them cope through strategies resounded by these factors. Thus, having known the factors that contributes to commuters' resiliency, this paper encourages future studies to explore strategies to alleviate the inconvenience brought by the present commuting system.

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