

**DIMENSIONS OF STRESS AMONG TRICYCLE DRIVERS IN DAVAO CITY:
AN APPLICATION OF EXPLORATORY FACTOR ANALYSIS**

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ABSTRACT

Moray (1979) suggested that mental workload was an inferred construct that integrates task difficulty, operator skill, and observed performance [1]. However, as Kantowitz & Simsek (2001) explained, workload is too difficult to directly observe and rather should be inferred from changes in performance. Therefore, there is indeed a need to study and identify the different dimensions of stress of tricycle drivers. This study was conducted to determine the dimension of stress among the tricycle drivers by utilizing the exploratory factor analysis (EFA) technique which the researcher used.

The study was conducted in different places of Davao City using 150 tricycle drivers as respondents. The adopted questionnaires which the respondents were asked to answer have been presented and validated. Through the rotated component matrix, out of 45 items the 21 items are discarded and the remaining 24 items are categorized into five dimensions. The result yielded five different factors that comprise emotional disturbances, physiological stress, alcohol addiction, mental health problem, and behavioural problems as the determinants of stress among the tricycle drivers in Davao city. Thereafter, the framework of stress among the tricycle drivers was developed.

KEYWORDS:

Health Care, Delivery System, Rural Health, GIDA, Philippine Health Agenda, Case Study

INTRODUCTION

Stress is inevitable and it is a normal part of life. Whether one likes it or not, stress happens when a person experience changes that are perceived as a challenge or threat. These changes may cause dysfunctionality in a person which could affect a great impact on the person's performance and efficiency [2].

Among several occupations, driving is one of the stressful jobs. It does not only expose the person to several form of stressors but it also affects the safety of the person and his passengers as well. Several studies have shown that professional drivers are vulnerable occupational group since they are usually prone to exposure in various stressors and have adverse working conditions. In addition, recent studies have associated negative job performances, adverse health outcomes and unsafe vehicle operation within this occupational group [3].

Drivers in the Philippines are growing in number particularly the motorcycle drivers. Motorcycles are part of the essential transportation in developing countries. In the case of the Philippines, motorcycle-propelled vehicle is a major part in the public transportation. In fact, 67.9 % of the total for-hire vehicles are composed of motorcycles

or tricycles [3]. Tricycle driving only requires low amount of capital and maintenance thus, several people most specially the unemployed opt to choose tricycle driving as their source of income and occupation [4]. With the growing number of tricycle drivers and the lack of research study in this field, it is imperative for the researchers to conduct a study in this occupational group in order to identify the indicators of stress among tricycle drivers.

OBJECTIVES

Generally, the study focuses on determining the dimension of stress among tricycle drivers in Davao City. Moreover, it focuses on understanding and analyzing the different dimensions that affects the stress among tricycle drivers.

REVIEW ON RELATED LITERATURE

Emotional Instability- Emotional instability and poor emotional awareness are cardinal features of the emotional dysregulation associated with borderline personality disorder (BPD). Most models of the development of BPD include child negative emotional reactivity and grossly inadequate caregiving (e.g., abuse, emotional invalidation) as major contributing factors [5]. An emotionally unstable person is more explosive, which confers that provoking of such persons puts them at enhanced risk of harmful behaviors. Whether the persons avoid emotions and the extent to which a person experiences anxiety in situations is determined by emotional stability [6]. Drivers often do things that they know are dangerous or unhealthy, such as driving recklessly, having unsafe sex, binge drinking, using drugs, or going on spending sprees.

Physiological Stress- The definition of stress and its origins and manifestations have been conceptualized in terms of a relationship between an individual and their environment [8]. The early models of stress were oriented on its biological aspect which only related with physiological changes that happen in a given situation. Later, the stimulus models of stress added the relationship of physiological and psychological strains [9]. Many studies were conducted for clarifying the psychological factors related to stress, and the results revealed that psychological factors play a significant role in the occurrence of physiological and psychological stress responses [10]. Under a general model of the stress response, when an individual experiences a stressor, the stressor will lead to a physiological response, one that can be measured by several indicators, such as elevated heart rate [11]. Accordingly, stressors vary in form and can include extreme temperature or lighting, time pressure, lack of sleep, and exposure to threat or danger, among others. All stressors, however, tend to produce similar physiological responses within the body [12].

Alcoholic Addictions- Alcohol is legal and commonly consumed by individuals as a means of coping up with stress. Per National Institute on Alcohol Abuse and Alcoholism, individuals who have been reported with higher level of stress tended to drink more [13]. Men tends to turn into alcohol more often than women as a means of dealing with stress. One stressor that can be linked to increase in consumption of alcohol is work-family conflict due to difficulty in integrating work and family life. According to Frone's simple cause-effect model, he found out that work-family conflict is related to increase in alcohol consumption though this model does not explain why work-family conflict is related to alcohol use or whether certain people are more prone to alcohol use when exposed to work-family conflict [14]

Mental Health Problem- Driving is an extremely skilled and complex act that involves higher cortical functions. A person driving a motor vehicle should be able to judge clearly and react quickly when necessary; failure to do so could result in risks to the driver or to others using the road [15]. Moreover, Pressure at workplace is unavoidable. As per World Health Organization, "work-related stress is the response people may have when presented with work demands and pressures that are not matched to their knowledge and abilities and which challenge their ability to cope," and this can be developed into depression or anxiety as it disrupts the person's healthy coping strategies that keeps their mood on track [16]. Mental disorders can affect judgement, concentration and reaction times, although the risk of road traffic accidents in people with mental illness is only marginally higher than in the non-mentally ill population. There is a greater risk of road traffic accidents with alcohol and substance misuse than in mental illness [17].

Behavioral Problems- Stress can influence the cognitive processes since it is associated with elevated levels of cortisol, a hormone that influences changes in brain functioning [18]. The high level of stress hormone or cortisol can influence a person's behavior in many ways that they tend to have behavioral problems.

According to a study by Ge et al., (2014), the effect of stress and personality on dangerous driving behavior among Chinese drivers, high levels of stress are significantly correlated with four subcategories of dangerous driving behavior and these are: negative cognitive/ emotional driving (NCED), aggressive driving (AD), risky driving (RD), and drunk driving (DD) [19]. With this, it has been shown that the behavior of driver in the road is really affected by the stress they experienced.

Stress affects the health, emotional and behavioral aspect of a person and these aspects are interrelated with each other. Stress that are left unchecked can contribute to many health problems such as headaches, chest pains, fatigue and muscle pains with these health effects, the emotional and behavioral stability of a person also changes. When a person experienced headaches, this will then change his mood to anxiety which may somehow affect his/ her behavior such as overeating or undereating [20]. Tricycle drivers are exposed to many stressors because of their working environment and these stressors might be a cause behavioral changes in their work.

METHODOLOGY

The researcher employed Exploratory Factor Analysis (EFA) in order to reduce data into smaller set of summary variables and identify the dimension of stress among tricycle drivers in Davao City. The researcher uses random sampling to 150 tricycle drivers around the city and data were analyzed using Statistical Package for the Social Sciences (SPSS) software.

RESULTS AND DISCUSSION

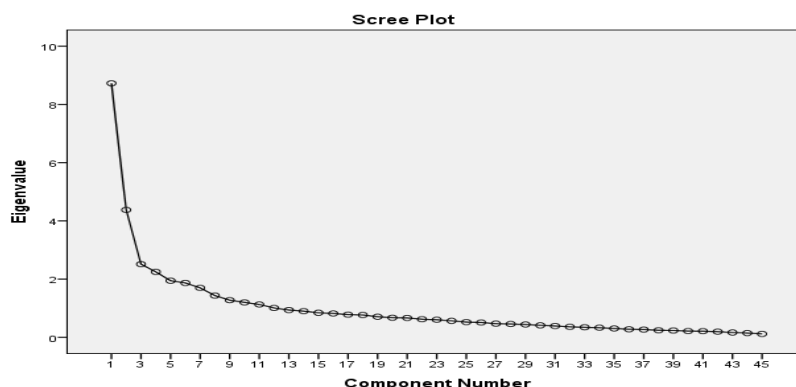
This section shows the analysis and interpretation of the gathered data.

KMO and Bartlett's Test. The table below shows the result of Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity. The Kaiser-Meyer-Olkin (KMO) yields a value of .770 implicating that the samples are in a high pattern of correlations allowing factor analysis that fits to data. The Bartlett's test of Sphericity yields a value of 2846.89 and a significance level of .000 which implies that null hypothesis must be rejected. Moreover, it allows data to proceed factoring the dimensions of stress among tricycle drivers in Davao City.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.770
Bartlett's Test of Sphericity	Approx. Chi-Square	2846.894
	Df	990
	Sig.	.000

Scree Plot. Figure 1 shows the graphical explanation of the total variance and the gradual trailing of the eigenvalues. The point of interest is where the curve flattens and it can be observed that the curve gets flatter as it reaches component number five (5) where eigenvalue starts to possess a value of less than one (1). Thus, only five factors were considered.



Rotated Component Matrix. As displayed in Table 1, some tricycle drivers are emotionally ins due to pessimistic view about oneself, sometimes they are encountering hopelessness and disinterested life. This is same as Cole et al. (2009) provokes negative emotional reactivity and grossly inadequate caregiving (e.g., abuse, emotional invalidation) as major contributing factors. There is also a tendency for suicidal or simply and easily disturb that the don't feel good about themselves.

Table 1: Rotated component matrix with grouped attributes of emotional disturbances.

Factors	Attributes	Loadings
Emotional Instability	item33 - I really don't feel good about myself.	.722
	item35 - I feel very tired and disinterested in life	.694
	item32 - I feel like other people don't understand me	.691
	item37 - I have felt so bad that I thought of hurting myself	.658
	item30 - I have temper outbursts I can't control	.639
	item41 - I have nightmares or repeated bad dreams"	.610
	item29 -When people criticize me, even in friendly, constructive way, I feel offended	.590
	item31 - I feel like I really can't trust anyone	.577
	item36- Impulsive behavior has caused me problems	.562
	item40 - I take pills to get to sleep	.558
	item34 - Generally I am not optimistic about my future	.545
	item42 - I wake up at least once in the middle of the night for no apparent reason	.529
	item22 - I easily find trouble with my co-drivers when I'm mad"	.506

In Table 2, it is revealed that tricycle drivers who suffer from physiological stress are mostly experiencing severe or chronic headaches with loadings of .676; chronic lower back pain with loadings of .668; have a hard time to feel really relaxed; and their body might be too exhausted. It affirms to Selye (1956) that the stressors vary in form and can include extreme temperature or lighting, time pressure, lack of sleep, and exposure to threat or danger, among others. All stressors, however, tend to produce similar physiological responses within the body.

Table 2: Rotated component matrix with grouped attributes of physiological stress.

Factors	Attributes	Loadings
Physiological Stress	Item5 - I get severe or chronic headaches	.676
	Item4 - I have severe or chronic lower back pain.	.668
	Item3 - I have a hard time feeling really relaxed.	.607
	Item1 - My entire body feels exhausted	.589
	Item13 - Because of my busy schedule I miss at least two meals during the week.	.563

As displayed in Table 3, it is shown that tricycle drivers tend to be alcoholically addicted consuming more than two beers, eight ounces of hard liquor a day. Sometimes, when they feel high from alcohol or drugs there is a tendency to drive. Some of the drivers also said that they are more effective as a driver when they are drunk. When they are restless, they take pills. Such results support to Wand (19930) that Alcohol is commonly consumed by individuals as a means of coping up with stress. Per National Institute on Alcohol Abuse and Alcoholism, individuals who have been reported with higher level of stress tended to drink more

Table 3: Rotated component matrix with grouped attributes of alcohol addiction.

Factors	Attributes	Loadings
Alcohol Addiction	Item16 – I drink more than two beers, eight ounces of wine or three ounces of hard liquor a day.	.704
	Item18 - When I'm feeling high from alcohol or drugs I will drive.	.649
	Item17 - When I drink, I like to get really drunk”	.606
	Item15 - I take pills to get to sleep	.560

Table 4 revealed that some tricycle drivers have trouble remembering things as a form of mental health problem; and others also experience problems with their sex life. It complements to the result of the World Health Organization that work-related stress is the response people may have when presented with work demands and pressures that are not matched to their knowledge and abilities and which challenge their ability to cope," and this can be developed into depression or anxiety as it disrupts the person's healthy coping strategies that keeps their mood on track

Table 4: Rotated component matrix with grouped attributes of mental health problem.

Factors	Attributes	Loadings
Mental Health Problem	Item8 - I have trouble remembering things	.531
	Item20 - My ulcer bothers me	.616
	Item23 - I have problems with my sex life	.635

. On the last dimension, displayed in Table 5 implicates that some tricycle drivers lack time to read newspaper and tend to be less informed about current events; Some of the drivers are tired even they have had already slept in the night. Other result revealed that some drives are fond of challenging other drivers on the road and others hardly able to open up their personal problems and/or issues with others so as to seek for an advice; according to Mayo (2019) that stress, if left unchecked, can contribute to many health problems such as headaches, chest pains, fatigue and muscle pains with these health effects, the emotional and behavioral stability of a person also changes. When a person experienced headaches, this will then change his mood to anxiety which may somehow affect his/ her behavior such as overeating or underreacting.

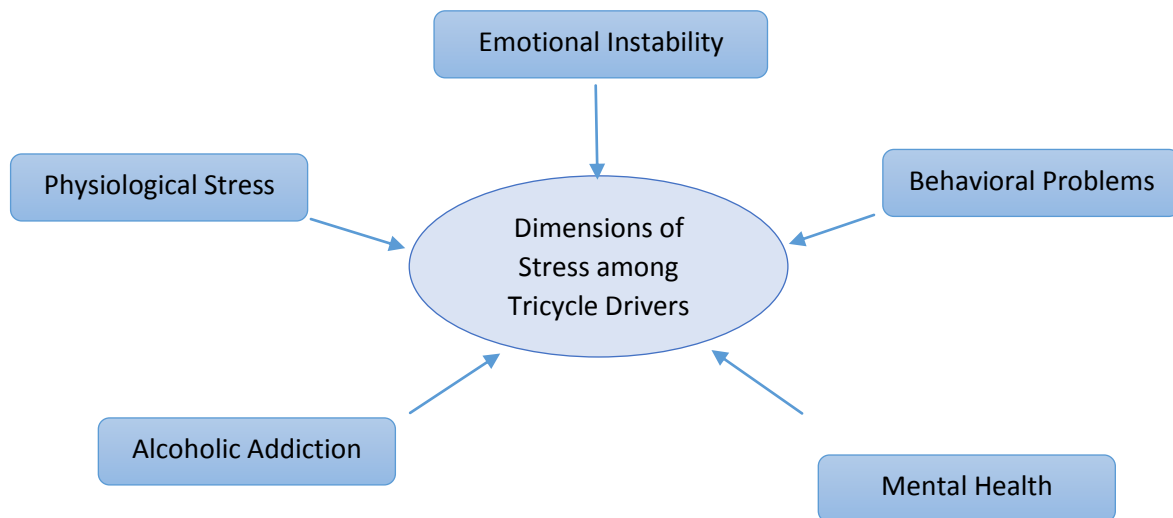
Table 5: Rotated component matrix with grouped attributes of behavioral problem.

Factors	Attributes	Loadings
Behavioral Problems	Item44 - I lack time to read the daily newspaper	.765
	Item45 - No matter how much sleep I get, I awake feeling tired	.695
	Item43 - I drive in a motor vehicle faster than the speed limit for the excitement and challenge of it	.586
	Item38 - When I have an important personal problem I can't solve myself, I do not seek professional help	.584

STUDY FRAMEWORK

From the findings of this research, a framework was developed which is presented in Figure 2. It has been determined that the dimensions of stress among tricycle drivers are emotional disturbances, physiological stress, alcoholic addiction, mental health problem and behavioral problems. This implies that most of the drivers in Davao City are unable to manage factors causing them too much stress.

Figure 2: Dimensions of Stress among Tricycle Drivers Framework

**CONCLUSION**

Based on the findings, the researchers concluded that there are five dimension of stress that affect tricycle drivers, namely; emotional disturbances, physiological stress, alcoholic addiction, mental difficulties, and behavioral problems.

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