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Impact of Lockdown on the Socio-Economic Condition of Taxi Drivers: A Study of GOA

Lisma Rout[1]

Department of Humanities and Social sciences, Institute of Technology Education and Research, S'O'A University. Bhubaneswar, Odisha India.

Balaji Vejju*[2]

(Coorosponding Author), Department of Humanities, Faculty of Science and Technology (IcfaiTech), ICFAI Foundation for Higher Education, Hyderabad, India.

Tannabi Rout[3]

Independent Researcher,

Pushpa Machani[4]

Siva Sivani Institute of Management, Hyderabad, India.

Muthyala Sarath[5]

School of Enterprise Development**,** National Institute for MSME (ni-msme)**,** Yousufguda 500 045, Hyderabad, Telangana**,**

ABSTRACT

The taxidrivers are mostly from weak economic background, migrants and/or does not have enough educational qualifications to get jobs in formal sectors. With theoutbreak of Covid-19 pandemic and subsequent lockdown measures by thegovernment, their economic condition of the taxidrivers have worsened andalso increases their financial burden as their daily earnings completely disappeared. Thestudy aims to analyse the socio-economic characteristics of taxidrivers and the impact of Covid-19 pandemic and the subsequent lockdown measures on the auto-rickshaw drivers of Goa city. It also attempt to get insight into the means of sustenance of the taxidrivers during lockdown period. In this paper, we havealso made an attempt to check whether there is any association between the possessionof bank account by the taxi drivers and their levels of monthly earnings usingChi-square analysis. Based on our result we conclude that there is an association between possession of bankaccount by the taxidrivers and their income levels. It has also been verified that lockdowns lead to the significant reduction in the monthly expenditure of the drivers. The study also provide an evidence that owning of land by the auto rickshaw drivers has a significant impact on the compulsion and decision of theirs to borrow money to sustain their livelihoods. However there is hardly any impact of owning of land on the decision of the drivers to work in the others sectors during lockdown. The majority of the taxidrivers or their families availed government benefits of some form but it was not enough to sustain their livelihoods in the lockdown period andcompel many to work in other sectors.

Keywords: Auto-rickshaws, Socio-economic characteristics, Covid-19, lockdown, Financial Burden

1. Introduction

Today, the world is witnessing one of the most destructive and profound humanitarianand economic disaster in recent history in the wake of the novel coronavirus disease (COVID-19) pandemic. Coronavirus was initially identified in Wuhan China, and thenrapidly spread all over the world due to the global movement of people. The novel coronavirus Covid-19 outbreak has been declared as a global pandemic on March 11, 2020 by World Health Organization (WHO) (Hu, 2020). The rapid spread of Covid-19pandemic not only affects the health of millions of people around the world but also bring economic and social distress across the globe. In the absence of a vaccine or a treatment, the government around the world considered the non-pharmaceutical interventions (NPIs) as an effective way to contain the disease. Internal and international travel restrictions, social distancing, stringent lockdowns are some of thewidely adopted non pharmaceutical measures to slow down the spread of the coronavirus and to decelerate progression of the pandemic. Different countries implement these preventive measures in different ways and extent, and the results of these measures is based on the characteristics of their

political and healthcare systems,socioeconomic and cultural aspects and also on the operational procedures used in their implementation. The various social distancing measures especially stringent lockdowns have serious and systemic impact on the economy. The Covid19 pandemic is a global shock the world have never seen before, involving the simultaneous disruptions of demand and supply in the globalized world. Loss of life, reduced productivity, businessclosures, shut down of private and public transportations, trade disruption, and decimation of the tourism industry leads to severe economic crisis and long lasting global recession. 114 million jobs were lost in the year 2020 as a result of Covid19 pandemic and the resulting lockdown, which, in combination with working-hourreductions within employment, resulted in working-hour losses approximately four times as high as during the financial crisis in 2009 (ILO, 2020a)

2. Literature Review:

(Acharya et al., 2020) in their paper "Analysis of Sustenance of Auto Rickshaw Driverduring Covid-19 Lockdown" throw some light on the condition of auto driver during pandemic. It had been found that after announcement of complete lockdown bygovernment and media highlighted the condition of vulnerable groups of people and casual daily labourer but the condition of taxidrivers were completely neglected. During this period these people were struggling financially, mentally and with health issues. It seems quite impossible to them to fight against invisible virus without any government and NGOs support. As there is no earning with low savings itis very difficult for them to take family responsibility as a sole. Many people worked in other sectorin the hope of earning penny. If these people get any economic help from Govt. or Autounion then their condition may slightly improve but unfortunately no one give a hand to help them. As we know income is scale of acquiring needs like ration, electricity, education, health etc. Due to there is no earnings it resulted into a negative environmentat home. **(Ramachander et al., 2015)** clearly depicts in his paper that the autos are an essentialpart of transport system in urban & semi-urban areas of India as it is easier to access atany time and affordable in price. It connects every area of city like a spider web. Loweducation & economic backwardness compels them to choose this profession. In normal days the income of these people is very low. In which it is difficult to afford them a decent lifestyle & to solve other problems like socioeconomic problems,insufficient savings etc. People are working more than 10-12 hours but did not able earnmuch to meet a lavish life. It is only help them to meet their basic needs.

(Tigari et al., 2020) studied the socio-financial condition and the problems faced by the auto-drivers in their day-to-day life. Through his paper he explained that lower section of society (BPL) category depends upon this profession due to low education & as no private or public hire them, it is only option for them to be self- employed to meet their basic needs. In the hope of decent lifestyle many people preferthis job. In busy life the average income of these people is just hand to mouth. Thus there is low savings for future purpose. Many people are willing to work in this servicebecause it acts as the spinal cord to uplift the economic condition of weaker section ofthe society. Majority of them not possess life insurance, medical insurance and debit/credit cards due to lack of education and awareness, there are various other factorssuch as health issues, addictions etc., which may have impacted to pull down their economic life. Their monthly income depends upon daily wage earning. **Shree Prakash (2020)** (Work & Centres, 2021) depicted the condition of auto drivers during lockdown period. Just like connective tissue of human body thisthree-wheeler vehicle connects every part of semi-urban & urban areas. It is for short and medium trips with affordable price. Due to lack of knowledge of functioning somepeople are exploited by middle man. After lockdown ruined all sector livelihood, healthand wellbeing Nationwide Their income is much low than before lockdown period as they were restricted to travel only short distance with dead km. People who having driving license get some support from state government.

3. Objectives

To analyse the impact of Covid-19 Lockdown on Socio-Economic Condition of taxi drivers in Goa.

4. Methodology

The study uses both quantitative and qualitative information from the primary data which we were collected through field survey and in person interviews using schedulequestionnaire consisting of 60 questions. The data were collected from 75 auto-rickshaw drivers, across different areas of Goa city (Goa). Data were coded, edited, and arranged as raw data collected from a field survey by "Microsoft Excels 2013". Thestudy is based on both qualitative and quantitative research methodology. The qualitative analysis is used to examine and represent socio-

economic characteristics ofthe taxidrivers and are represented through various statistical tools such as percentage, mean, frequency table, graphs like pie charts and bar graphs. We also use these statistical tools to represent the impact of Covid-19 pandemic and subsequent lockdown measures on the livelihoods of taxi drivers and their means of sustenance during lockdown period.We use Chi-square test of independence which is a statistical tool used to test the association between two categorical or nominal variables to test the hypothesis The Paired Samples t-Test which is another statistical techniques used to compare the means of two measurements taken from the same individual (in this case two differenttimes) is used to test .

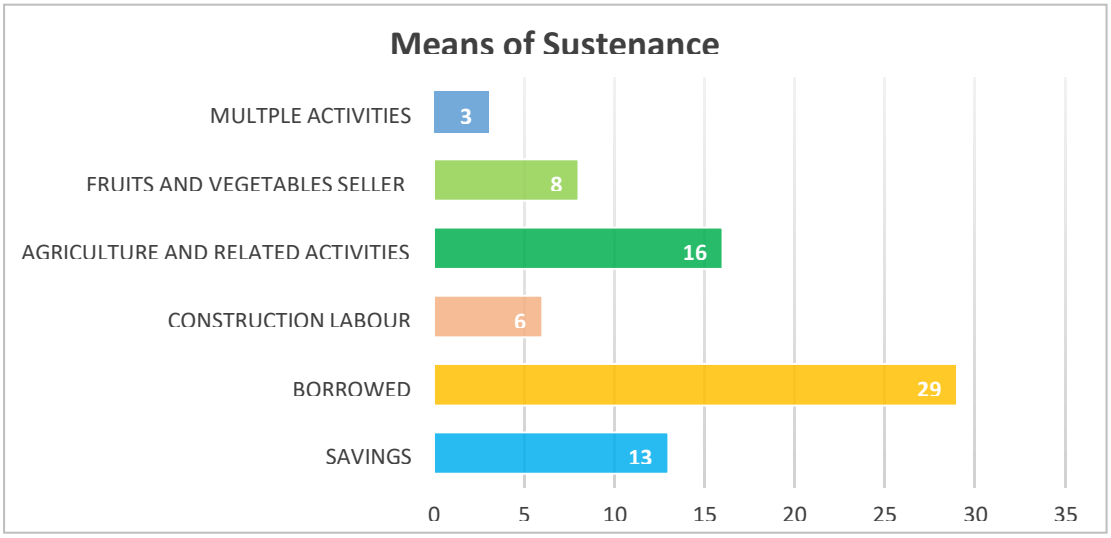
5. Results and Findings

5.1 Impact of Covid-19 pandemic:

Conditions during lockdown: The nationwide lockdown due to Covid-19 and complete ban on mobility and travel restrictions, the only source of their income also disappeared which left the auto- rickshaw drivers in the lurch with no other means of livelihood. Like most daily wagers,they are also having tough time in making ends meet. Many face issue in paying his house rents as have no earnings due to complete disappearance of earnings. Some of them return to their native home and engaged in agricultural related activities related activities like production of food grains, vegetables, raising livestock etc., or work on others' field as farm labourer to sustain their livelihoods. We observed from the surveythat many drivers manage to survive with the little amount of saving they had saved over the years and many borrowed money from their relatives or moneylenders or selltheir taxior jewellery of their wives in order to survive in this difficult period.It is also found that many auto drivers also switched to other sources of livelihood suchas work as construction labour, selling fruits and vegetables, woods and other low earning jobs.

The below bar graph shows the various means of sustenance adopted by different auto-rickshaw drivers during lockdown period.

Figure 1: Means of Sustenance of TaxiDrivers during Lockdown



Sources: Auther's Own Estimation From the Field

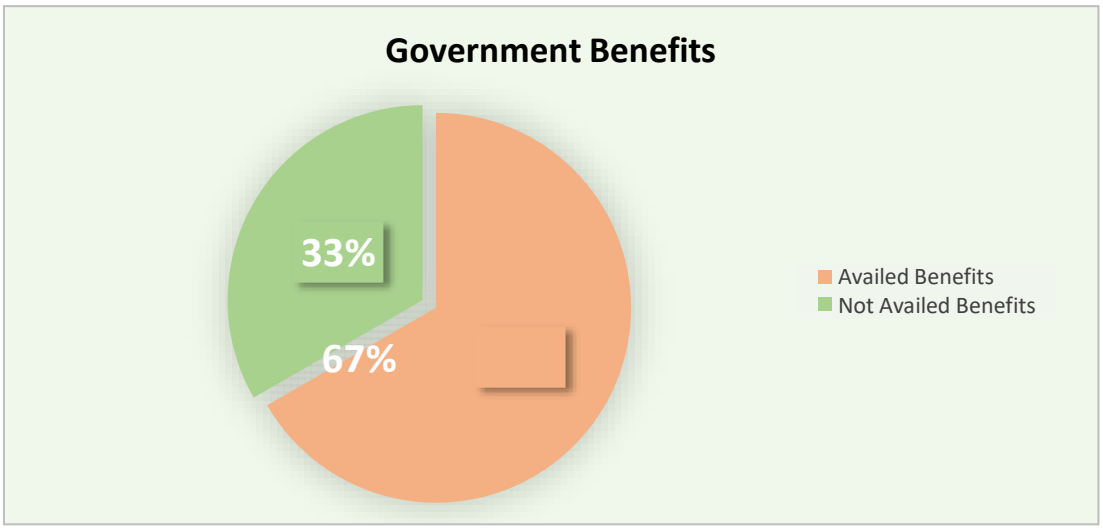
From the above bar graph we can observed that 29 out of 75 drivers depend on borrowing either from their relatives or moneylenders to survive the lockdown period.13 drivers rely on their savings, 16 drivers engaged in agricultural and related activities,6 of the drivers work as construction labour on wage of ₹300 per day, 8 drivers sells fruits and vegetables, and 3 of them did multiple activities to sustain their livelihood in

5.2 Government scheme benefitting taxidrivers

The Covid-19 pandemic and consequent lockdown has disproportionately hurt marginalized communities due to loss of livelihood and lack of food, shelter, health, and other basic needs. Thus there is need of government assistance to the poor daily wage earners who lost their only source of livelihoods during covid-19 pandemic and lockdown. Indian Government has announced ₹ 1.7-lakh-crore relief package to take care of poor, workers and

those who need immediate help amid a lockdown to fight thecoronavirus pandemic(ET Bureau, 2020). The Central government has announced freedistribution of 5 kilograms of wheat and rice per unit to all ration card holders during the lockdown period under the "Pradhan Mantri Garib Kalyan Yojana". An equal amount of food-grains in equal proportions would be distributed free of cost from the state's scheme. The state's quota of food grains is being lifted and carried to the PDS retailers to ensure smooth distribution of food-grains. Through "Pradhan Mantri Garib Kalyan Scheme" poor families were also assisted by giving payments to different sections of the society directly into their bank accounts. Adirect transfer of ₹ 500 for three month to all women with Jan Dhan accounts by centralgovernment and ₹1000 per family by the Goa government in order to sustain the lockdown period. In our survey we enquire to the taxidrivers whether they or their families availed these benefits provided by the government or not. The data of this enquiry is represented in below pie-chart. From the below pie-chart it is clearly observed that 67 % of the surveyed drivers and (included their families) have availed one or the other form of the above mentioned government benefits. Only 33% of the drivers or their families don't receive any form of government benefits.

Figure 2: Government Benefits availed by the Taxi Drivers



Sources: Auther's Own Estimation From the Field

We enquired to those who don't availed the benefits about the reasons, and found that they don't have ration cards and Jan Dhan Account of any of the family members. Eventhough these reliefs are far from sufficient, though it somehow reduce the precariousness of the auto-drivers and their family situation during lockdown.

5.3 Conditions after lockdown

Taxidrivers hoped that their situation would improve after the lockdown. But even after phase wise lifting of lockdown the regular users do not feel comfortableto return to usual travel on account of keeping a safe distance from travelling in auto- rickshaw due to the fear of getting infected. Work from home and reduced mobility ofthe people due to fear of infection has significantly contributed to the earnings of the drivers of Goa city. In spite unlock, schools, colleges were closed, which create scarcity of passengers as many of the schools and college going students commute through autos. After lockdown due to the scarcity of passengers taxidivers have to wait in their stands for hours to fill their autos but many times they have to travel with their partly filled with the passengers. The dead kilometres travel by auto- rickshaw drivers without passenger after unlock is also increased to 20 km on averagefrom the before lockdown average which was 10-15 km per day, this adds to the agonyof the drivers. The auto rickshaw drivers and their families are very much exposed to the corona virus infection. It is found form our observation during field survey that mostof the drivers of the Goa city are not well aware of the necessary preventive measuresto avoid corona infections. Most of them don't wear masks and don't maintain any social distancing measures and not sanitize their vehicle after each trip. The most plausible reason behind these are unawareness among the drivers and their ignorant behaviour, lack of money to adopt these measures. Non adoption of preventive measureis also one of the reason that commuters' fear to travel via auto-rickshaws which add tothe loss of daily earnings of the drivers. We also found that their daily expenditure on fuel also rose significantly after

the lockdown. We asked to the respondent drivers the reason behind the rise in fuel expense even there is reduction in their trips and most ofthem told us that their fuel expense increased due to the sharp rise in fuel prices after lockdown. This results in the reduction in the net earnings of the drivers and increase their financial burden. The below table shows the average fuel expenditures of the auto-rickshaw drivers before pandemic and after lockdown along with the percentageincrease in expense between two periods.

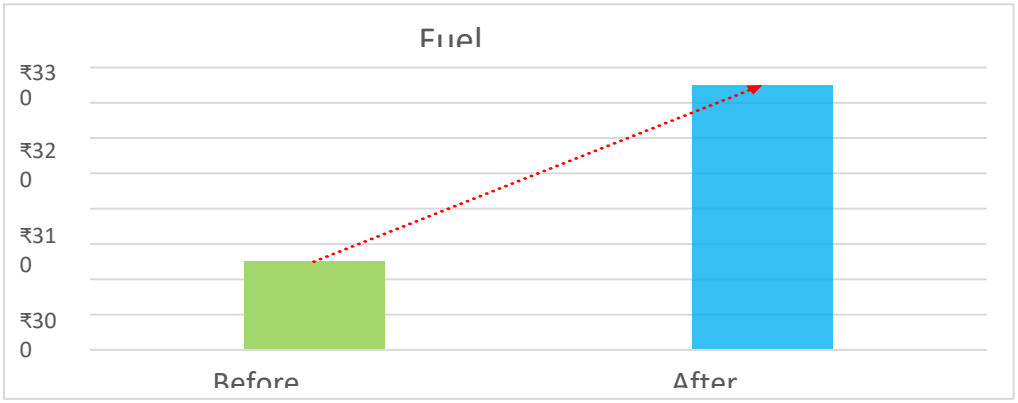
Table 1: Average Daily Expenditure on Fuel Before and After Lockdown

Periods	Fuel Expense
Before pandemic	**₹ 275**
After lockdown	**₹ 325**
(%) Increase	**18%**

Sources: Auther's Own Estimation From the Field

We also represented the increase in fuel expenditure between two periods graphically through bar graph:

Figure 3: Average Daily Expenditure on Fuel Before and After Lockdown



Sources: Auther's Own Estimation From the Field

We clearly see from the above table that the average daily expenditure of fuel before the outbreak Covid-19 pandemic is ₹ 275 which increased to ₹ 325 after the lockdownperiod. There is a sharp rise of 18% on daily fuel expense by the drivers which reducedtheir already low earnings. We also observed that the working hours of the drivers remain more or less before thepandemic and after the lockdown which show their eagerness towards returning to thebefore pandemic daily earnings. It is also observed from our survey there is a hike in the taxifare after the lockdown, the drivers increased in their fare on averageis ₹ 3 for distance covered of 5 km or less, ₹ 5 for distance cover of more than and upto10 and for more than 15 km it has also been found that average increase in fare is ₹ 10.We try get the auto-drivers opinion about and fare hike many of the respondents said that the rise is fare is mainly due to increase in fuel price and some also said that this isdue to both loss of daily earnings after lockdown and rise in fuel rates.

We have collected the data through field survey on the taxidrivers whether or not they employed (work) in the other sector or remain idle during lockdown and onwhether or not they have availed government benefits. We are interested to know that whether employment in other sectors during lockdown period associated with availingof any form of government benefits. In other words, we try to find if there is relationshipbetween employed (worked) in other sectors and availing the government benefits or both the variables are independent of each other. Thus we perform Chi-square test of independence in order to check whether two variables [worked (employment) in other sectors during lockdown period and availing of government benefits by the auto- rickshaw drivers of Goa] are likely to be related or not. We have counts for two categorical or nominal variables. We have an expectation that the two variables are notrelated to each other. The test gives us a way to decide if our idea is plausible or not.

In order to perform Chi-square test of independence on our data, we have check whether our data fulfils the requirements or assumption of Chi-square test.

- We have a sample of 75 taxidrivers form different places of Goa city from whom we collected the data on whether or not they (employed) worked in other sectors during lockdown and whether they availed any government benefits or not. Though our data are from convenience sample, we consider it as a random to meet the first requirement of data being random sample from the population of interest.

- Our variables are whether or not taxidrivers worked (employed) in othersectors during lockdown and whether or not the taxiavailed the government benefits. Both variables are Binary or dichotomous i.e., categorical variable. Thus the second assumption of variable being nominal or categorical is alsofulfilled.

- The last requirement is for more than five expected values for each combination of the two variables. To confirm this, we need to know the total counts for whether or not taxidrivers worked (employed) in other sectors during lockdown andthe total counts for whether or not the taxidrivers availed the governmentbenefits. For now, we assume we meet this requirement and will check it later.

After fulfilling the assumptions (We still need to check that more than five values are expected for each combination.), we run the Chi-Square Test of Independence in SPSS. The first table is the Case Processing Summary, Which tells the number of valid casesused for analysis. Only cases with non-missing values for both variables whether or nottaxidrivers worked (employed) in other sectors during lockdown and whether or not the taxidrivers availed the government benefits can be used in the test. The table shows that the number of valid cases are 75 i.e. 100%. The numberof missing cases is 0 i.e. 0%. Thus we use all 75 cases of whether or not auto-rickshaw drivers worked (employed) in other sectors during lockdown and whether or not the taxidrivers availed the government benefits in the test.

Table 2: Case Processing Summary of Employed in other Sectors and Government Benefits

Crosstabs - Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Employed in other sectors * GovernmentBenefits	75	100.0%	0	0.0%	75	100.0%

Sources: Auther's Own Estimation From the Field

The next table is cross-tabulation or cross-tab of Employed in other sectors andGovernment Benefits which allows us to understand that those who were not employedin the other sector (i.e. idle) during lockdown availed government benefit or not.

Table 3: Cross-tabulation of Employed in other sectors and Government Benefits

Employed in other sectors * Government Benefits Cross-tabulation

		Government Benefits		
		Availed	Not Availed	Total
Employed inotherIdle sectors	Count	33	14	47
	Expected Count	31.3	15.7	47.0

		% within Employed in othersectors	70.2%	29.8%	100.0%
		% within Government Benefits	66.0%	56.0%	62.7%
		% of Total	44.0%	18.7%	62.7%
	Work	Count	17	11	28
		Expected Count	18.7	9.3	28.0
		% within Employed in othersectors	60.7%	39.3%	100.0%
		% within Government Benefits	34.0%	44.0%	37.3%
		% of Total	22.7%	14.7%	37.3%
Total		Count	50	25	75
		Expected Count	50.0	25.0	75.0
		% within Employed in othersectors	66.7%	33.3%	100.0%
		% within Government Benefits	100.0%	100.0%	100.0%
		% of Total	66.7%	33.3%	100.0%

Sources: Auther's Own Estimation From the Field

First we need to check expected cell counts in combination of both Employed in othersectors and Government Benefits, we found from the table that no cells hand an expected count less than 5 i.e., expected cell counts are all greater than 5 so the last requirement/assumption which is for more than five expected values for each combination of the two variables has also fulfilled. After meeting all the assumption and requirements for applying the Chi-square independence test, we now look for the Chi-square test of independence table. The below table shows the Chi-square test results for testing the association between Employed (worked) in other sectors during lockdown and availing of government benefits by the taxidrivers of Goa city.

Table 4: Chi-Square test of association between Worked in the other sectors during Lockdown and Availing of Government Benefits

Chi-Square Tests

	Value	df	Asymptotic Significance(2-sided)	Exact Sig.(2sided)	Exact Sig.(1sided)
Pearson Chi-Square	.712[a]	1	.399		
Continuity Correction[b]	.349	1	.555		
LikelihoodRatio	.706	1	.401		

Fisher's Exact Test					
N of ValidCases	75			.453	.276

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.33.

b. Computed only for a 2x2 table

Sources: Auther's Own Estimation From the Field

The key result in the Chi-Square Tests table is the Pearson Chi-Square. We observe from the above table that the Pearson Chi-Squared statistic, $\chi 2 = 0.712$, degrees of freedom 1, corresponding to p-value is 0.399 which is far greater than our chosen significance level ($\alpha = 0.05$). Therefore we retain the null hypothesis conclude that thereis not any significant evidence of an association between Employed (worked) in other sectors during lockdown and availing of government of taxidrivers. In otherwords, we say that Employed (worked) in other

sectors by the taxiduring lockdown is independent of their availing of the government benefits.

Symmetric Measures

The Symmetric Measures Table which shows the strength of association between Employed (worked) in other sectors by the taxidrivers during lockdown andavailing of the government benefits by them is shown below:

Table 5: Symmetric Measures to test the strength of association between Worked in theother sectors during lockdown and availing of government benefits

Symmetric Measure

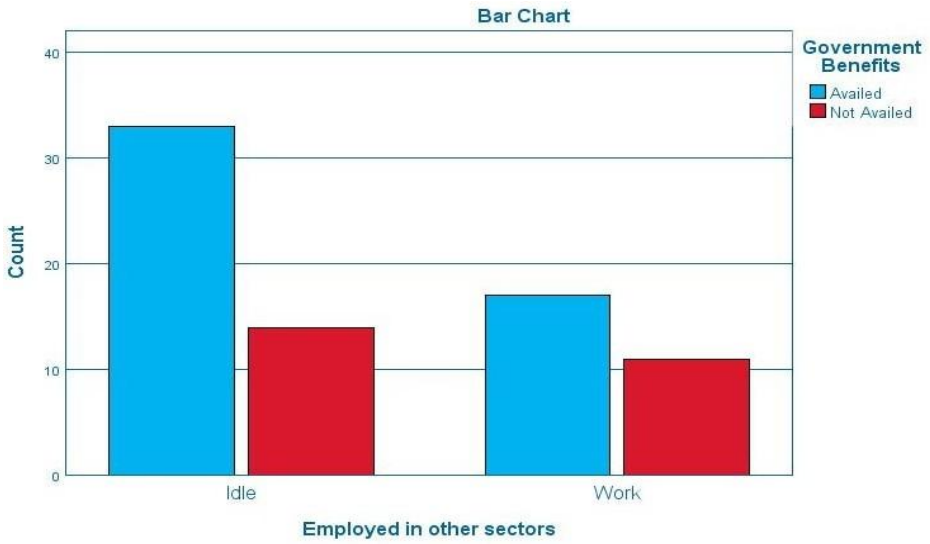
		Value	ApproximateSignificance
Nominal by Nominal	Phi	.097	.399
	Cramer's V	.097	.399
	ContingencyCoefficient	.097	.399
N of Valid Cases		75	

Sources: Auther's Own Estimation From the Field

From the above table we observed that the value of both Phi coefficient, Cramer's V and Contingency coefficient is 0.097 show weak or negligible association between thevariables, we also found that the significance value (p-value) of all three measures, Phicoefficient measure, Cramer's V and Contingency coefficient are 0.399 indicating a statistically insignificant relationship. Therefore we conclude that there is no statistically significant relationship Employed (worked) in other sectors by the auto- rickshaw drivers during lockdown is independent of their availing of the government benefits.

It can be easier to visualize data than read tables. The clustered bar chart option allowsa relevant graph to be produced that highlights the group categories and the frequencyof counts in these groups

Figure 4: Relationship between Employed in other sectors and Government benefits



Sources: Auther's Own Estimation From the Field

The above chart is produced by using Employed in other sectors as the row variable and government benefits as the column variable. The "clusters" in a clustered bar chartare determined by the row variable (in this case, Employed in other sectors). The colourof the bars is determined by the column variable (in this case, government benefits). The height of each bar represents the total number of observations in that particular combination of categories. The above bar graph shows that between both categories of two row variable the difference of heights of the bar within each category is similar i.e. the height of availedis greater than not availed in both idle and work. If there is association between employed in the other sectors and government benefits we would expect that the heightof the availed and not availed gets reversed in idle and work. Therefore, it can be also verified from looking at the bar graph that there is no significant association between employed in other sectors and government benefits.

The result of the Chi-Square test of Independence is as per our expectation that that thetwo variables (employed in other sectors and government benefits) are not related to each other. Thus we conclude that government benefits do not affect the decision or need of the taxidrivers of whether to work in the other sectors like workingas construction labour or work in agriculture and related activities or to sells vegetablesand fruits etc. during lockdown period to sustain their livelihood. The government benefits that the taxidrivers or their family availed are not sufficient to affect the compulsion or choice of the drivers of whether to work to meet the daily needs or to remain idle during lockdown. One of the implication, of the resultis that although government benefits help many taxidrivers and their familiesin some way but it is not enough to sustain their livelihoods in lockdown period.

6. Conclusion:

Auto-rickshaws form an integral part of the informal urban and semi-urban transport system in Goa and play a vital role in meeting the mobility needs of the population. At the same time, the sector serves as a major source of livelihood for economically weaker sections of society. Most auto-rickshaw drivers depend primarily on daily earnings and remain financially vulnerable due to low and unstable incomes. This study examines the socio-economic characteristics of auto-rickshaw drivers in Goa and analyses the impact of the Covid-19 pandemic and subsequent lockdown measures on their livelihoods.The study reveals that the majority of drivers earn between ₹10,000 and ₹15,000 per month, which is barely sufficient to meet basic household needs. Despite financial inclusion initiatives such as the Pradhan Mantri Jan Dhan Yojana (PMJDY), a considerable number of drivers still do not possess bank accounts. Statistical analysis indicates a significant association between income level and bank account ownership, with relatively higher-income drivers being more likely to have bank accounts. Nearly half of the respondents operate rented vehicles, which substantially reduces their net earnings. Although many drivers own small plots of land, these are insufficient to replace their primary source of income.

The Covid-19 pandemic and lockdown measures severely disrupted the livelihoods of auto-rickshaw drivers by eliminating their daily earnings and increasing financial insecurity. As a survival strategy, drivers relied on savings,

borrowings, and low-paid alternative occupations, leading to a significant reduction in household expenditure. The study further finds that land ownership significantly influenced the decision to borrow during the lockdown period, though it had no significant effect on participation in alternative occupations. While a majority of drivers received some form of government assistance, the support proved inadequate to sustain livelihoods during the crisis.

The study concludes that even in the post-lockdown period, drivers continue to face economic distress due to reduced passenger demand, rising fuel prices, and inadequate fare revisions. It highlights the need for targeted welfare measures and inclusive transport policies to improve the socio-economic conditions of auto-rickshaw drivers in Goa.

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