**KERALA’S INEQUALITY : A DIMENSION UNEXPLORED**

**Prof. Raju John**

Assistant Professor, Baselious College, Kottayam

**Abstract**

*This study tried to understand the impact of migration and remittances on Kerala's inequality scenario. An attempt has been made here to examine whether migration was causing inequality between households with or without migrants and if so, to what extent.*

**1.0 Introduction**

Kerala's development experience has always received attention at the national and international levels. In early economic literature, Kerala is perceived as a state where comparatively lower levels of income (Net State Domestic Product) coexisted with high levels of human development (United Nations 1975). However, more recent studies have illustrated an altogether different story. Though Kerala experienced faster economic growth in the post-reform period, the state has also been experiencing widening interpersonal inequality during this period. Subrahmanian and Prasad (2008) attributed Kerala’s increasing inequalities to “excessive” liberalization and globalization policies and lack of proper policies on tax and social security. Mishra and Parikh (1992) discussed the high levels of inequality between the urban and rural sectors in Kerala. The role of caste in Kerala's inequality is emphasized by Deshpande (2002). Problems in tax policy and development expenditure (Singh, Bhandari, Chen and Khare 2002, Pal and Ghosh 2007), the differential effect of globalization, economic reforms and neoliberal policies among different occupational groups and (Jha, Gaiha and Sharma 2007) are reasons suggested by other authors.

Yet one of the most potent factors of inequality has been completely kept out of analysis. This relates to international migration and international remittances. Remittances sent by international migrants were as much as a third of (31 per cent) of Kerala's Net State Domestic Product (Zachariah and Rajan 2010, 2012). Over the past one decade remittances coming to Kerala increased by 254% (Zachariah and Rajan 2010), but the proportion of households with an emigrant or the proportion of households that received remittances from abroad is stagnant at about 17 per cent since 1998 (Zachariah and Rajan 2010,2012). This implies that the vast majority of Kerala households, over 80 per cent, who are still not direct participants of this great phenomenon that is transforming Kerala's economy and society, are excluded from the benefits of migration. Given the relative earnings differentials between international migrants and non-migrants, can we attribute the rise of inequality in Kerala’s economy to international migration? Is it that while the base of migration has remained stagnant, the returns from migration has vastly increased, thus leading to rising inequality in Kerala? Given this background, it is important to explore the relationship between international migration and inequality in the Kerala context. Thus the objective of this paper is to understand the role of migration in Kerala’s economic inequality by comparing the living standards of migrant and non-migrant households. Does migration cause inequality in living standard between migrant and non-migrant households? This is the question this paper tries to answer.

**2.0 Review of literature**

Some studies argue that inequalities will increase due to migration (Stark, Taylor and Yitzhaki (1986), Portes and Rumbaut (1990), Rodriguez (1998), Barham and Boucher (1998), Tullao, Cortez and See (2007), Zosa and Orbeta Jr. (2009)). However, some other studies have the opposite view (Adams (1989), Massey, Goldring, and Durand (1994), Pernia (2005, 2008), King (1997)).

Theoretically, whether migration and remittances contribute to increasing or decreasing inequality depends on who is migrating and remitting. If migrants come from poorer segments of the population, their remittances are more likely to contribute to a reduction in inequality because, on average, poorer families are going to receive the extra income from remittances. On the other hand, if migrants tend to be from already richer households, remittances are more likely to increase inequality since comparatively richer families will benefit from the extra income. This point is emphasized by Jones (1998) and Stark, Taylor and Yitzhaki (1986).

Migration, like the adoption of a new production technology, initially entails high costs and risks. The costs and risks are likely to be especially high in the case of international migration. The effect of remittances on inequalities over time depends on how migration facilitating information and contacts become diffused. When information is costly and scarce, migration is subject to a significant degree of uncertainty. Given this fact, pioneer migrants tend to come from households at the upper, middle or top of the sending area’s income distribution since they are the ones best equipped to make a high risk, high-return 'investment' and the income they send home in the form of remittances is therefore likely to widen income inequalities in migrant source areas. The role of remittances in the overall household income distribution at this initial stage depends upon the magnitude of remittances in relation to income from other sources, as well as upon the position (in terms of total income) of remittance-receiving households in the income distribution of the place of origin (Portes and Rumbaut (1990), Lipton (1980), Stark, Taylor and Yitzhaki (1986), Massey, Goldring and Durand (1994), Koechlin and Leon (2006))

**3.0 Data and Methodology**

The Centre for Development Studies (CDS) Thiruvanathapuram, Kerala conducts periodic surveys to monitor the current status of emigration from and return emigration to the state of Kerala. So far five such surveys have been carried out in 1998, 2003, 2007, 2008 and 2011. KMS also has a unique panel data set of those households who happened to be surveyed for both 1998 and 2008 rounds. Information from these surveys constitutes one of the few reliable sources of information related to emigration from Kerala. This paper seeks to understand role of migration in Kerala’s inequality scenario using data generated by CDS – MMS. For the sake of convenience MMS will be hitherto referred as Kerala Migration Survey (KMS), the name given to 1998, 2008 and 2011 rounds of MMS.

**Methodology**

Analysis using proxies of Income

Most of the aforesaid studies on migration – inequality relationship use income or proxies of income like household expenditure to understand the role of migration in inequality. These studies believe that income or its proxies is the best tool to understand standard of living. Decomposition of Gini coefficient of income by source is the dominant method adopted to explore the migration inequality link. As far as the information about income of migrant and non Migrant Households, no data is available in KMS. However data on household consumer expenditure, saving and investment are available in 2008 round of KMS. Thus an analysis using consumer expenditure will give only a static picture. Still an effort has been made to make use of the available data as it can clearly reveal the direction of the impact of migration on inequality.

Following the method suggested by Lerman and Yitzhaki (1985) the Gini coefficient for total income, G, can be represented as

$G=\sum\_{k=1}^{K}S\_{k}G\_{k}R\_{k} $Where

Sk = share of source k in total income

GK = the source Gini

RK  = Gini correlation of income from source k with the distribution of total income

Stark, Taylor and Yitzhaki (1986) following Lerman and Yitzhaki (1985) note that the influence of any income component upon total income inequality depends on:

1. How important the income source is with respect to total income (Sk)

2. How equally or unequally distributed the income source is (GK)

3. How the income source and the distribution of total income are correlated (RK).

This logic is used to derive the method of Gini decomposition. By using the method of Gini decomposition we can estimate the effect that 1 percentage change in income from source k will have on total income inequality. This effect is given by

MI = ((Sk\* GK\* RK)/ G) – Sk

Where MI refers to marginal impact of change in an income source on inequality.

This method is used by researchers worldwide due to its intuitive interpretability. We can ascertain the marginal impact of remittances on inequality. But unfortunately data on indicators for a proxy of income are available only in 2008 round of KMS that too for only 3000 households. Thus an analysis using consumer expenditure only gives a static picture.

**Asset-Based Analysis**

Studies have proved that when data on income or it’s proxies are not available, Asset-based indices of Standard of living (sometimes referred to as asset indices) can be used as an alternative tool for understanding household socio-economic positions (Filmer and Pritchett (1999), Morris et al.(2000), Sahn and Stifel (2003), Bollen et al.(2002), Bicego et al.(2003), Schellenberg et al.(2003), Sastry (2004), Tarozzi and Mahajan (2005), Ainsworth and Filmer (2006)). The Asset index is often used in the empirical literature on poverty and inequality analysis as a proxy variable for household income. The use of the asset index to understand standard of living became popular after the pioneering work done by Filmer and Pritchett came out in 1999. As said above, this method employs data of household’s assets such as durable and semi-durable goods to describe household welfare instead of using household’s income or expenditure data.

This paper seeks to understand the role of migration in inequality by using a Standard Of Living Index (SOLI) which is a weighted average of the scale-free indicators of standard of living, the indicators being house characteristics, consumer durables characteristics, and land size. The weights are the scores of the first principal component generated through factor rotation method.

SOLI is subjected to decomposition of Generalized Entropy (GE) measures of inequality by subgroups (migrants/non migrants)

**Generalized Entropy (GE) Measures of inequality**

The general formula for Generalized Entropy (GE) Measures is given by



Where y is the mean income per person (or expenditure per capita). The values of GE measures vary between zero and infinity, with zero representing an equal distribution and higher values representing higher levels of inequality. The parameter α in the GE class represents the weight given to distances between incomes at different parts of the income distribution, and can take any real value. For lower values of α, GE is more sensitive to changes in the lower tail of the distribution, and for higher values GE is more sensitive to changes that affect the upper tail. The most common

Values of α used are 0, 1, and 2. GE (1) is Theil’s T index, which may be written as

Where n is the number of individuals in the population, yp is the income of the person indexed by p, and μy is the population’s average income. (Needles to say,GE measures can be calculated for variables other than income too).This formula of Theil’s T Statistic generates an element, or a contribution, for each individual or group in the analysis which weights the data point’s size (in terms of population share) and weirdness (in terms of proportional distance from the mean). When individual data is available, each individual has an identical population share (1/N), so each individual’s Theil element is determined by his or her proportional distance from the mean. This formula emphasizes the following points.(1) The summation sign reinforces the idea that each person will contribute a Theil element.(2) yp/μy is the proportion of the individual’s income to average income.(3) The natural logarithm of yp /μy determines whether the element will be positive (yp /μy > 1); negative (yp /μy < 1); or zero (yp /μy = 0).

Theil’s L - If value of α in GE formula is 0 then we can have a measure called GE(0), also known as Theil’s L, and sometimes referred to as the mean log deviation measure, is given by



Theil index can be decomposed into within and between group components. This has to be explained in some detail. Let us take the issue of migration’s role in inequality. Till now the approach to the problem by dividing the population into migrant and non migrant households. So the two groups are migrant and non migrant households. Now Theil index decomposition technique will generate two elements. First one is within group component of inequality. Second one is between group components.

The statistical technique of Theil index decomposition decompose the total inequality (measured using Theil index) into two components

1. Within group inequality – It represents the contribution of inequality within group to total inequality. When the case of migrant and non migrant households is taken, both are not homogenous groups. Households in each of these groups have diverse socio economic characteristics which cause some inequalities within the group. This inequality will be reflected in income/consumption pattern/asset holding of the households. This inequality will definitely contribute to total inequality and is represented as ‘Within group inequality’.

2. Between group inequality - Different socio economic groups differ in their standard of living. This difference creates inequality between different groups known as between group inequality.

To decompose Theil’s T index (that is, GE (1)), let Y be the total income of all N individuals in the sample, and y = Y/N be mean income. Likewise, Yj is the total income of a subgroup (for example, the urban population) with Nj members, and y j = Yj/Nj is the mean income of this subgroup. Using T to represent GE (1),

(1)

Where Tj is the value of GE (1) for subgroup j. This Equation separates the inequality measure into two components, the first of which represents within group inequality while the second term measures the between group inequality.

A similar decomposition is possible for GE (0); this breakdown of Theil’s L is given by



When confronted with information on a welfare measure for two time points, one has to identify the components of the change in inequality. Defining nj = Nj/N, which is the proportion of those in the sample who are in the jth subgroup, and adding the time subscripts 1 (for initial period) and 2 (for the second period), where appropriate, for Theil’s L

(2)

This decomposition is accurate if the changes are relatively small, and if average values across the two periods (for example, of nj or Lj) are used. The first term on the right-hand side measures the effect on inequality of changes in relative mean incomes; if the income of a small, rich group grows particularly rapidly, for instance, greater inequality is likely to result. The second term measures the effects of shifts in population from one group to another. Finally, the third term in equation (2) measures the size of changes in within-group inequality.

To understand the role of migration in inequalities, one has to replace income using asset based SOL index. The application of Theil decomposition is not the best method to understand the role of migration in inequality. It can only give an idea about inequality within and between groups. But given the non availability of data on proxies of income in a manner that facilitates comparison of role of migration in inequality over a reasonable period; this is best method available.

**Panel regression analysis**

Even if aforesaid analyses reveal some role of migration in Inequality, the apparent contribution of migration in inequality in such types of analyses may be due to some other factors. These factors may be present in a disadvantaged manner in non migrant HHs, thereby making them relatively disadvantaged in terms of SOLI score. So it is important to control the other factors to see if migration really matters in Standard of living. To accomplish this panel regression of values of SOLI on various factors affecting inequality is also performed.

**4.0 Results and Discussion**

Analysis using proxies of Income

Average consumer expenditure of migrant households is 6189.9 Rs which is higher than non migrant household by 1159Rs. Since data on income is not directly available, data on Household consumer expenditure, saving and investment is added up to have a proxy measure of income, (referred to as income itself in this paper). This income is subjected to Gini decomposition technique of Stark, Taylor and Yitzhaki (1986) to have an idea about role of migration and remittances in inequality. The results are shown as a table.

Table 1

Inequality decomposition by source

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **1** | **2** | **3** | **4** | **5** | **6** |
| Income source | Sk | Gk | Rk | Share  | Impact  |
| Remittance income | 0.15 | 0.90 | 0.49 | 0.15 | 0.06 percent |
| Other Income | 0.85 | 0.52 | 0.85 | 0.85 | -0.06 percent |

Column 5 of table 1 shows the share of each income source on total income. Column 6 of table shows the effect that a 1 percentage change in income from source k will have on total income inequality. As shown in the table, a 1 percentage increase in remittance will increase inequality in consumption expenditure by 0.06 percentages. Thus remittances do seem to have some effect on increasing inequality, but only by a small measure. Other income than remittances seem to have a much larger role to play in widening inequality between migrants and non-migrants.

Asset-Based Analysis

In 1998 the average value of asset indicator was 23.03 for non migrant households and 34.21 for migrant households. In 2008 the corresponding figures are 40.16 and 51.27 respectively. Thus there exists prima facie evidence for inequality in asset holding between migrant and non migrant households. To confirm the role of migration in inequality, a Theil Index decomposition was performed.

Table 2 shows the decomposition of total inequality in the scores of asset indicator among the households into between group (Migrant and Non migrant) and within group components for both 1998 and 2008.Column 2 shows total inequality of asset indicator which is represented by Theil’s T (GE(1)) index. This index is decomposed into within and between components in columns 3 and 4 respectively. Column 5, 6 shows the percentage share of within and between components in total inequality.

Table 2

Decomposition of Theil Index

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 | 6 |
| Year | Total | Within | Between | Within Share | Between Share |
| 1998 | 0.28 | 0.26 | 0.02 | 93.32 percent | 6.68 percent |
| 2008 | 0.12 | 0.12 | 0.01 | 94.28 percent | 5.72 percent |

Table 2 shows that overall inequality of asset ownership declined in the 10 year period. It is the inequality between the groups that matters more in total asset inequality. In 1998 around 93 percentage of total inequality in asset based standard of living in Kerala is due to inequality among migrant households and non migrant households. Around 7 percentage of total inequality in asset based standard of living in Kerala is due to inequality between migrant and non migrant households. In 2008 around 94 percentage of total inequality in asset based standard of living in Kerala is due to inequality among migrant households and non migrant households. Around 6 percentage of total inequality in asset based standard of living in Kerala is due to inequality between migrant and non migrant households. Thus inequality between migrant and non migrant do contribute to total inequality but by a small amount. More importantly migration’s contribution to inequality has declined in past one decade though the decline is marginal. The migrant – non migrant does contribute positively to Kerala’s inequality situation. But one fails to gather sufficient evidence to prove that the magnitude of the contribution is substantial. As mentioned before this result is based on GE (1) Theil’s T measure of inequality. When Theil’s L was used the contribution of within group component rose to 95 percentage in 1998 and 96.8 percentage in 2008.

**Household characteristics and Asset Based Inequality**

It may be the case that various other inequalities among households are reappearing as inequalities among migrant/non migrant households. This possibility demands the identification of other factors that are causing inequalities among households. The information about other socio economic characteristics of the households available with the 1998 and 2008 rounds of KMS is used to see if SOL of households (represented by SOLI) varies with those characteristics

Information is available about the following characteristics in 1998 and 2008 round of KMS.

1. Sex of head of Household - In 2008 a Male headed household (HHs hereafter) have 45.22 as the average value of the asset index. While it is only 41.23 for a Female headed household. Corresponding figures for 1998 were 27.54 and 26.75. Thus gender based gap in SOLI widened in the 10 years.

2. Caste and migration - Based on information about religion and cast of members of households. The households are classified into Scheduled Cast/Scheduled tribes (SC/ST), Other Backward Classes (OBC) and GENERAL (households who does not belong to SC/ST/OBC). The following table shows the mean value of asset index for these three socio economic groups.

Table 3

SOLI scores for Socio economic groups.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Migrant 2008 | Non migrant 2008 | Migrant 1998 | Non migrant 1998 |
| GENERAL | 55.26 | 45.26 | 39.77 | 27.56 |
| OBC | 49.49 | 39.61 | 31.89 | 22.84 |
| SC/ST | 38.43 | 27.92 | 18.02 | 11.90 |

In 1998-2008, the relative positions of SC/ST, OBC and GENERAL category households remain same for both migrant and non migrant households. This indicates that migration reinforces existing inter group inequalities. But the disparity between migrant/non migrant households (migrant being better than nonmigrant) behaved differently for 3 socio economic groups in the 10 year period. While the disparity fell for GENERAL, it increased for OBC and SC/ST. But the improvement in SOLI for migrant/non migrant in the 10 year period is almost the same for all the 3 socio economic groups.

SOLI scores and sex of head of households

Table 4

SOLI scores by sex of head of households (1998, 2008)

|  |  |  |
| --- | --- | --- |
| Sex of head of household | Migrant | Non Migrant |
| Male 2008 | 51.70 | 41.95 |
| Female 2008 | 50.33 | 34.39 |
| Male 1998 | 34.28 | 23.84 |
| Female 1998 | 33.63 | 19.90 |

Table 4 shows the mean SOLI score of male and female headed households in 1998 and 2008 (Represented in column 1 as Male/Female 1998 and 2008). Male headed households have higher SOLI score than female headed households. But this difference is reduced by migration in both 1998 and 2008.Gap between migrant/non migrant is higher for female headed households in both 1998 and 2008.Thus migration plays some role in reducing gender based inequality in household asset ownership.

**Panel regression analysis.**

Panel regression model has Asset based standard of living indicator (SOLI) as the dependent variable .This is represented as SOLI in the model .Migration is represented by a ratio of number of migrants to total household size. This will be referred to as migration intensity and will be represented as MIGINTEN. Among the factors other than migration which determines SOLI, Caste of household members is represented by a dummy which is Zero for non SC/ST households and One for SC/ST households .This dummy will be represented as CASTE .Sex of head of household is also represented by a dummy ; if head of household is Male it is put as Zero and if Female it is put as one .This will be represented as HDSX .Another dummy is put for the year, say 1998 or 2008 .This will be represented as YD .The number of people who are employed but not migrants will be represented as NMEMPL .As mentioned above an interaction term of Cast (dummy) and migration is also included in the model .This will be represented as INTER. The results of panel regression are shown in Table 5.

Table 5

Factors that influence Asset based standard of living indicator

|  |
| --- |
| Dependent variable : Asset based standard of living indicator (SOLI) |
| Model | Pooled OLS | Fixed effects | Random effects | Fixed effect |
| Regressors | Coefficient(t value)(p value) | Coefficient(t value)(p value) | Coefficient(z value)(p value) | Coefficient(t value)(p value) |
|  |
| Constant | 31.386(35.1)\*(0.000) | 30.065(31.01)\*(0.000) | 31.028(35.05)\*(0.000) | 30.065(30.7)\*(0.000) |
| MIGINTEN | 6.221(6.39)\*(0.000) | 2.962(2.6)\*(0.000) | 5.041(5.5)\*(0.000) | 2.962(3.26)\*(0.001) |
| NMEMPL | -1.22(-0.9)0.37 | 2.285(1.29)(0.198) | -1.406(-0.11)(0.916) | 2.286(1.25)(0.211) |
| CASTE | -8.227(-5.58)\*(0.000) | -5.569(-2.42)\*(0.016) | -7.605(-5.02)\*(0.000) | -5.57(-2.01)\*(0.045) |
| HDSX | -5.063(-5.1)\*(0.000) | -4.416(-3.24)\*(0.001) | -4.888(-4.96)\*(0.000) | -4.416(-3.18)\*(0.002) |
| YD | 13.705(15.27)\*(0.000) | 13.867(19.74)\*(0.000) | 13.781(19.72)\*(0.000) | 13.867(19.77)\*(0.000) |
| INTER | -1.056(-0.51) | -2.043(-0.86) | -1.409(-0.73) | -2.043(-0.83) |
| R squareWithinBetweenOverall | 0.158--- |  |
| 0.3220.0530.149 | 0.3170.0730.16 | 0.3220.0530.149 |
| F statistic  | 56.37 | 69.538\* |  |  |
| Wald  |  |  | Chi square (6)= 471.66 |  |
| F test that all u\_i=0 |  | 2.35\* |  |  |
| Hausman Specification test | Chi square = 18.24(p=0.0057) |
| Number of observations | 1770 |

\*Significant at 5% level

Results of panel regression show that migration, represented by MIGINTEN positively influence asset holding of households. Moreover its contribution is significant. But on the other hand non migrant employment represented by NMEMPL does not have any significant impact on asset holding of households. Hence migrant households may be able to acquire more assets than non migrant households. This might lead to widening of inequalities in asset holding between migrant and non migrant households. Thus the regression result indirectly confirms the role of migration in creating inequalities between migrant and non migrant households. Even though caste and sex of head of household have significant impacts on asset holding, they are not interacting with migration. Thus the regression results brought out various factors that influence asset based standard of living indicator and at the same time confirms the role of migration in determining standard of living of household. The difference in significance of migrant and non migrant employment point to the role of migration in inequality.

**4.0 Summary and Conclusion**

This study tried to understand the impact of migration and remittances on Kerala's inequality scenario. An attempt has been made here to examine whether migration was causing inequality between households with or without migrants and if so, to what extent. The dominant analytical technique adopted in studies examining migration-inequality link is to estimate the marginal impact of a change in remittances on some inequality measure, mostly the Gini coefficient. An analysis of this sort was done using data on income proxies, mainly consumer expenditure data, obtained from 2008 round of KMS. This analysis revealed that 1% rise in remittances coming to Kerala raise the Gini coefficient by 0.06%, thus remittances have a direct positive impact on inequality but the magnitude of influence was not very high. Had data on income proxies available for 1998 round of KMS, one could have conducted the same analysis for both 1998 round and compared the results. Since this was not possible, further study could not be made based on proxies of income. Since information on asset holding and housing conditions were available for both 1998 and 2008 rounds, an asset based standard of living indicator (SOLI) was used to compare the role of migration in inequality in 1998 and 2008. To ascertain the contribution of inequality between migrant and non migrant households to overall inequality a decomposition of Theil index of SOLI scores was done. This analysis showed that inequality between migrant and non migrant households contributed only 7 percentages of total inequalities in 1998 and 6 percentages of total inequalities 2008. The rest was contributed by inequality within migrant and non migrant households. Thus it was inequalities within migrant and non migrant households that mattered. Migration did have a positive role in inequality but the magnitude of its contribution was not very high. Migration reinforces cast based inequality in household asset holding but reduces gender based inequality in household asset holding. Finally the study tried to filter out migration's impact of standard of living by running a panel regression to control other factors that influence standard of living, indicated by SOLI scores of panel households. This analysis revealed a positive and significant role for migration in determining standard of living of household; but at the same time showed an insignificant role to non migrant employment. This difference in significance indicated that inequality between migrant and non migrant households was widening.

The study revealed that migration and remittances had a positive and significant role in creating inequalities in standard of living between migrant and non migrant households. Quantification of role of migration in inequalities confirmed that migration was creating inequalities in standard of living between migrant and non migrant households. Migration and remittances had a positive impact on inequality between migrant and non migrant households. But the magnitude of impact was not very high. However, given that even if the effect of migration on inequality was small in comparison to other unexplained factors, the analysis of panel data showed that its role in inequality was significant. In short, though migration may not be a cause to worry as an explanation for inequality currently, it has the potential to become one in future, as shown in the panel analysis.

**5.0 Limitations of the Study and recommendations for further study**

The data used for comparing the role of migration belong to a period of 10 years. But inequality is something that gets established among individuals and households in a longer period of time. Asset accumulation of individuals and households is an outcome of various historical processes to which they are exposed. Thus the patterns of asset holdings of households may be influenced by events that took place much before 1998. Migration from Kerala became prominent from 1940’s onwards. Given the fact that migration from Kerala has more than 70 years of history, an analysis with longer time span will give better picture of the role of migration in inequality. So a study covering a longer period is necessary. But constraints of non availability of data make such a study a difficult one.

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