The cost of long commutes: How do female bus riders fare differently? The case of Forsyth County, NC

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Executive Summary

According to a 2016 study, Forsyth County, North Carolina, is one of the worst counties in the United States in terms of economic mobility for the poorest 20 percent of its residents. The lack of transportation options and choices is a contributing factor to the county's predicament, as pointed out in a 2018 CSEM survey of bus riders. This report details evidence that female riders pay an even larger price in terms of lost wages. This is because long commute times penalize female riders, whereas for male bus riders, we find the opposite effect. Throughout the existing literature, there is precedent for our findings. Studies in various disciplines have found that females tend to bear more family responsibilities in addition to their job obligations. These facts, in combination with the riders' perception that long commutes are a significant waste of time, make the experience particularly unpleasant for female riders. We argue that these factors might be behind the negative relationship between wages and commute times for female bus riders in Forsyth County.

INTRODUCTION

Forsyth County, NC is one of the worst counties in the entire American South and third worst in the country in terms of some measures of economic mobility. A child born to parents in the bottom 20 percent of the income distribution has only a 4.5 percent chance of reaching the top 20 percent later in life.[1,2] Winston-Salem, NC, the seat of Forsyth County, has experienced significant growth in concentrated poverty. In 2000, there were only 2 census tracts in the city where 20 percent or more families lived below the poverty line.[3] By 2012, however, this number increased to 19, suggesting that low income households became rapidly more concentrated in particular areas.[4] This concentration of poverty is related to a concept known as residential segregation, which is recognized as a key obstacle to economic mobility.[5] Researchers have also identified public transportation systems as a key barrier. A 2018 study by CSEM corroborates this view, finding evidence that the public bus system adversely affects economic mobility in Winston-Salem.[6]

Employed bus riders in Winston-Salem have lost out on countless opportunities to climb the economic ladder because of the bus system. Nearly 50 percent of bus riders have turned down higher paying job offers because the bus did not take them close enough to the jobs.[7] Around 20 percent have lost jobs in the past due to unexpected bus route changes.[8] As summarized by

[1] Raj Chetty, Nathaniel Hendren, Patrick Kline, and Emmanuel Saez, "Where is the land of opportunity? The geography of intergenerational mobility in the United States," The Quarterly Journal of Economics, 129(4), pp. 1553-1623, 2014.
[2] These findings are what inspired the formation of the Center for the Study of Economic Mobility (CSEM). The center's objectives are to understand the barriers to economic mobility in Forsyth County and to devise strategies to remove them.
[3] Elizabeth Kneebone, "The growth and spread of concentrated poverty, 2000 to 2008-2012, *Brookings Metropolitan Opportunity Series*, 2014. Retrieved from https://www.brookings.edu/interactives/the-growth-and-spread-of-concentrated-poverty-2000-to-2008-2012/
[4] *Id*. at 3.
[5] According to Chetty et al. (2014), five primary factors determine economic mobility, which are 1) residential segregation, 2) income inequality, 3) quality of education system, 4) social capital, 5) strength of family structure/network.
[6] Zachary D Blizard, "Economic Mobility in Winston-Salem/Forsyth County, NC: A Closer Look into Employed Bus Riders' Lives, Ambitions and Missed Opportunities to Climb the Economic Ladder." *CSEM Working Papers in Transportation Series, no. 1:* November. Published at Center for the Study of Economic Mobility, Winston-Salem State University, 2018.
[7] *Id.* at 6.
[8] *Id.*

Richardson (2018), the average rider spends over 11 hours a week commuting to and from work, which is equivalent to a day and a half of uncompensated labor (see Table 1).[9] The average bus rider spends 135.4 minutes commuting to and from work in a single day, while the same commute would only take 32.1 minutes with a vehicle. As Richardson (2018) demonstrates, the time dedicated to this commute results in considerable opportunity costs.[10] This lost time could have been used to earn additional wages. Over the course of a 5-day work week, riders would save around 8.6 hours driving a vehicle directly to work, according to their own estimates. As shown in

Table 1

Time Tax of Public Transportation: Commuting to and from Work in Winston-Salem, NC[11]

Time	by Bus	(if by vehicle)	Difference
Daily (minutes)	135.4	32.1	103.3
Weekly (minutes)	677.0	160.4	516.6
Weekly (hours)	11.3	2.7	8.6

Table 2, if the average bus rider were to use this time to work for an hourly wage of $10.14, he or she would earn an additional $87.20 a week. This translates to an additional $4,360.20 a year. CSEM's previous work measured bus related opportunity costs resulting from the forgone wages as well as the lost earnings from jobs not taken because they were not on a bus route.

This report extends our previous work by measuring a third component: the adverse impact of longer commutes on female bus riders' wages. Males do not face this burden. Using a 2018 scientific, random survey of Winston-Salem bus riders, we find striking differences. Females earn

[9] Craig Richardson, "Why is economic mobility so (surprisingly) low in North Carolina?" *CSEM Policy Brief, 1*(1), 2019. These calculations use data from the Fall 2018 CSEM survey of 215 employed bus riders in Winston-Salem, NC.
[10] *Id.* at 9.
[11] Table 1 is borrowed from Richardson (2019).

less for jobs that are further away from their home. Thus, long commutes exact a wage penalty on females. Males, on the other hand, fare the opposite, and are rewarded for higher commutes with higher wages.

Table 2

Dollar Value of the Public Transportation Time Tax in Winston-Salem[12]

Net additional hours commuting by bus, weekly	Estimated hourly wage (average of bus riders)	Opportunity cost of extra time commuting by bus	
		Weekly	Yearly (50 weeks)
8.6	$10.14	$87.20	$4,360.20

EXPLAINING COMMUTE TIMES ON FEMALE VS. MALE WAGES: THEORY AND EVIDENCE

What might explain the differential impact on females versus males? One theory is that hourly wages may increase with longer commutes if, for example, the commutes are made to reach high paying jobs. There is evidence suggesting that male workers are willing to tolerate long commutes if it enables them to live where they want and if they are financially compensated for the long trips.[13] In contrast, because females more typically shoulder a "double burden" of work and family, females may prize flexibility in hours, closeness to shopping areas and other non-monetary benefits. As a result, they may take cuts in their wages as a tradeoff for these benefits.

For females, if they are focused on finding jobs that are more "family friendly," they likely will need to widen their search from nearby neighborhoods. In doing so, they may choose jobs that pay less but offer amenities such as more flexibility, child care, or benefits. For males, if they are focused primarily on maximizing wages, they will require a higher wage to offset the cost of longer

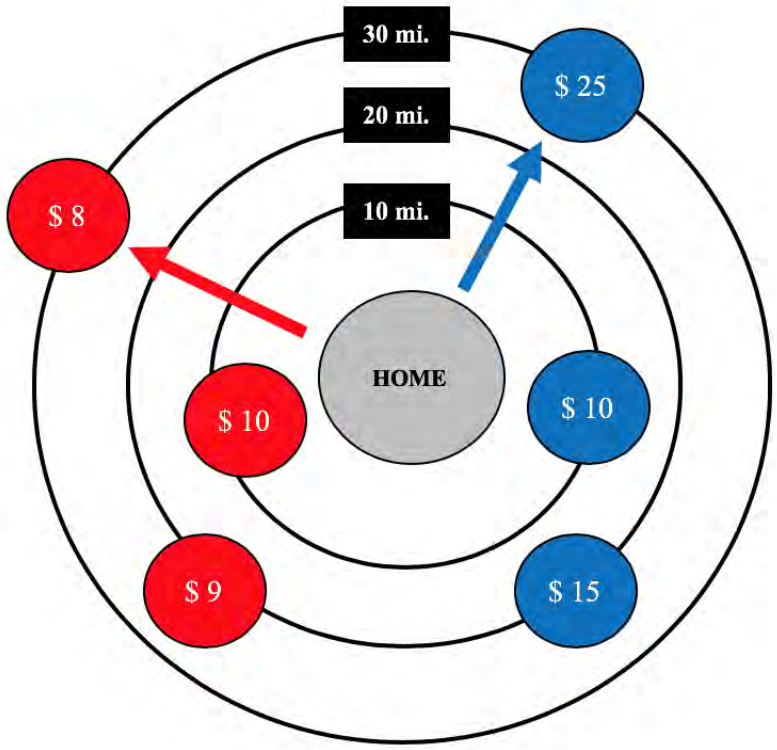
[12] Table 2 is borrowed from Richardson (2019).
[13] J. Paul Leigh, "Are compensating wages paid for time spent commuting?" Applied Economics, 18(11), pp. 1203-1214, 1986.

commutes. Hence their expected wage rises with longer commutes. Unlike females, males are unlikely to face a "double burden" of work and family and, therefore, are unlikely to take a pay cut.

Figure 1 illustrates this theory. The blue (red) circles represent job opportunities for males (females), along with their associated hourly pay. The black rings radiating out from the grey circle, representing a commuter's home, indicate distances. For example, places that fall on the

Figure 1

Job Market Possibilities Widen with Distance, but Male and Female Wages Behave Differently As They Seek Other Job Attributes Further From Home



RED represents the female experience
BLUE represents the male experience

inner ring are 10 miles away from home. The blue arrow shows the male commuter's ultimate decision. He commutes 30 miles and is compensated for the trip with an hourly wage ($25) much higher than those offered at jobs closer to his home ($10 and $15). Females, on the other hand, have a different experience. For example, a female worker commutes farther in search of job opportunities that will provide her with the flexibility to simultaneously work and take care of her other responsibilities (childcare, etc.). She is also willing to take pay-cuts to make sure she obtains one of the few jobs available that meet these requirements. The pay-cut she is willing to take increases as her job search spans wider distances ($10 for 10 miles away, to $8 for 30 miles away). This illustrates how she loses leverage to negotiate pay, due to her need to attain employment that meet these strict requirements. Additionally, if employers are aware of the distance she is willing to commute, they may rightly infer that her options are limited. Hence, they have a competitive edge in terms of any wage negotiations that occur.

This report indicates that our empirical evidence based on CSEM data supports the theory explained above. It is *essential* that we understand this relationship because if a female rider earns less per hour as a result of having used the public bus, then her climb up the socioeconomic ladder is more arduous than it otherwise would have been. Therefore, if we want to understand economic mobility, it stands to reason that understanding these effects on earned wages is critical, especially if female bus riders are bearing an even larger price for long commutes than males. Prior to delving into our data, a summary of existing research is helpful on this question.

OTHER RESEARCH ON HOW COMMUTING AFFECTS THE SEXES DIFFERENTLY

There has been a good deal of research published on how long commutes affect females differently than males. For example one report finds that longer work commutes promote

absenteeism in male and female workers, which in turn negatively impacts productivity.[14] Studies show that longer job commutes affect the psychological well-being of males and females differently.[15,16,17] A ten minute increase in commute time can significantly decrease the well-being of female commuters, while males are not harmed.[18] Compared to males, females are also more likely to commute using a public bus.[19] They endure more of the responsibilities regarding domestic work (childcare, cooking, elder care, etc.), regardless if they are employed.[20,21,22] Hence, these additional responsibilities, on top of their job obligations, leave females more psychologically vulnerable to longer commutes because time is an even scarcer resource.[23] Indeed, evidence suggests that females tend to value travel time more than males.[24,25] In the US, females' levels of happiness are declining relative to males'.[26] It has been argued that the increased opportunities in the workplace come at the "price of increased guilt arising from the feeling that you simply cannot do everything."[27,28] Hence, longer commutes, which are highly inefficient uses of time, are particularly stressful for females because they are doubly aware of how that time could have been used to complete other responsibilities. Happiness and psychological well-being have

[14] Jos van Ommeren and Eva Gutiérrez-i-Puigarnau, "Are workers with a long commute less productive? An empirical analysis of absenteeism," *Regional Science and Urban Economics, 41*(1), pp. 1-8, 2011.
[15] Jennifer Roberts, Robert Hodgson, and Paul Dolan, "It's driving her mad": Gender differences in the effects of commuting on psychological health, *Journal of Health Economics, 30*(5), pp. 1064-1076, 2011.
[16] Mei-Po Kwan, "Gender, the home-work link, and space-time patterns of nonemployment activities," *Economic Geography 75*(4), pp. 370–394, 1999.
[17] Meni Koslowsky, Avraham Kluger, and Mordechai Reich, *Commuting Stress: Causes, Effects and Methods of Coping,* Plenum, New York, 1995.
[18] *Id.* at 15.
[19] *Id.*
[20] *Id.*
[21] Joni Hersch, and Leslie Stratton, "Housework, wages, and the division of housework time for employed spouses," *The American Economic Review, 84*(2), pp. 120-125, 1994.
[22] Arlie Hochschild, *The Second Shift*, Avon Books, New York, 1989.
[23] *Id.* at 15.
[24] Janice Madden and Michelle White, "Spatial implications of increases in the female labor force: A theoretical and empirical synthesis," *Land Economics, 56*(4), pp. 432-446, 1980.
[25] Research shows that workers expect compensation in return for work-related travel, equaling some percentage of their usual hourly wage. Various studies find that females expect a greater percentage of their hourly wage to compensate them for travel time, compared to males. It has been concluded from this that females have a greater valuation of time than males.
[26] Betsey Stevenson and Justin Wolfers, "The paradox of declining female happiness," *American Economic Journal: Economic Policy, 1*(2), pp. 190-225, 2009.
[27] *Id*. at 15.
[28] *Id*. at 26.

been found to be significant predictors of labor productivity.[29,30,31] Those who report being happier and report higher levels of well-being also tend to be more productive.[32] Therefore, since longer commutes tend to adversely affect female commuters' happiness and well-being, it should be no surprise, then, that female bus riders' wages are suffering in Forsyth County, especially if they have regularly endured such an experience for many years.

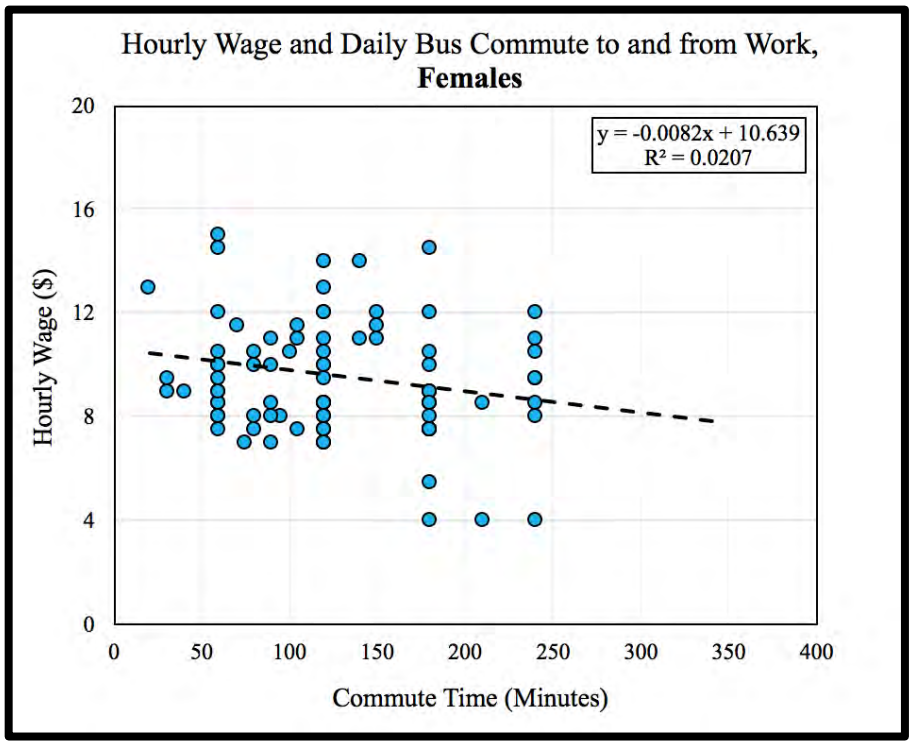
WHAT DO THE DATA SHOW?

The data are from the WSTA Employed Bus Rider Survey, which was designed by CSEM. The survey was administered in August of 2018. Ten trained interviewers delivered the survey, which consisted of 54 questions. The survey had three main sections, which were Employment, Demographic, and Transportation. The surveyed population was employed bus riders in Winston-Salem, NC. The sample included 215 employed bus riders. The sampling method was random, stratified and weighted across all the bus routes and during different times, to insure it provided a representative picture of employed bus riders in Winston-Salem.

Figure 2 shows that for female bus riders in Winston-Salem, the longer they spend commuting to and from work, the less they tend to make per hour. It shows the hourly wages of our sample of female bus riders plotted against their daily commutes to and from work, in minutes. There is a visibly negative relationship between these two variables. The trend suggests that as commutes increase by an additional 1 minute, hourly wages tend to fall by $0.008. This may not seem like much of a tradeoff. Remember, this is *per minute.* If we convert this result from minutes to hours, the data suggest that as commutes increase by 1 hour, hourly wages tend to fall by $0.48 per hour.

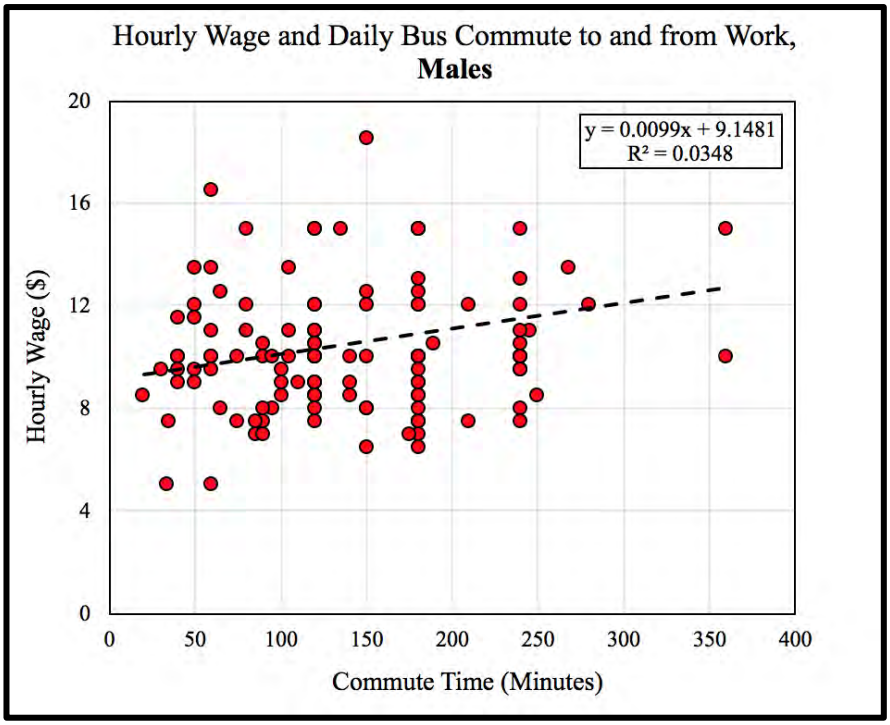
[29] Andrew Oswald, Eugenio Proto, and Daniel Sgroi, "Happiness and productivity," *Journal of Labor Economics, 33*(4), pp. 789-822, 2015.
[30] Daniel Nettle, *Personality: What makes you the way you are,* Oxford University Press, 2009.
[31] Thomas Wright and Barry Staw, "Affect and favorable work outcomes: two longitudinal tests of the happy productive worker thesis*," Journal of Organizational Behavior, 20*, pp. 1-23, 1998.
[32] *Id.* at 31.

Figure 2



Male riders, in contrast, do not experience this negative relationship between commute times and hourly wages. Figure 3 shows their hourly wages plotted against their daily commutes to and from work, in minutes. There is a discernible positive relationship between these two variables, suggesting that as commutes get longer, hourly wages tend to increase for males, for reasons suggested earlier. As male riders' commutes increase by 1 minute, hourly wages tend to rise by $0.009. If we convert this result from minutes to hours, as we did for females earlier, the data suggest that as male riders' commutes increase by 1 hour, hourly wages increase by $0.54 per hour. Therefore, male wages are positively related to daily commute times.

Figure 3



The correlations shown in Figure 1 and 2 are interesting, but they can only provide limited insights. Before we discuss the next set of results, we thought it important to mention a few things to keep in mind. We are by no means saying that the correlations above, nor the results to follow, demonstrate a *causal* relationship. It would be both incorrect and invalid to conclude from the results that if a female rider avoids using the bus, then her hourly wage will spontaneously increase. The dataset we have is simply a single snapshot of a particular moment in time. We are highlighting the negative association between these two variables. The negative relationship we observe

between wages and commute times is likely a *glimpse* of a possible long-term influence. To further delve into this question using more sophisticated analytical techniques first involves some assumptions.

ASSUMPTIONS NECESSARY FOR DEEPER ANALYSIS OF THE DATA

To begin, we must assume that female riders have been using the bus for the majority of their working years. This is a reasonable assumption, considering the average female bus rider in Winston-Salem has been using public transportation for over a decade.[33] A second assumption is that female riders have also spent that time *in* Winston-Salem/Forsyth County. This is not an unreasonable assumption because bus riders' earned incomes place them near the poverty line and there is some evidence that those in poverty are less likely to move compared to others.[34] Additionally, recent evidence indicates that Americans have become less geographically mobile compared to other generations.[35] Therefore, it does not appear unreasonable to make the assumption that the riders have been using the bus in Winston-Salem for quite some time. Lastly, we must assume the lengths of female riders' commutes have remained roughly the same over the years in which they have used the bus. This last assumption seems all the more reasonable in light of the first two assumptions being true. Regardless of whether a female bus rider has worked in the same location for her entire career, she is likely to have always endured long commutes. Consequently, we believe our assumptions are not unreasonable and that the observed patterns are likely a sign of a deeper relationship between commute times and wages.

[33] *Id*. at 6. The average female bus rider in Winston-Salem has been using public transportation for roughly 11 years.
[34] Paul Taylor, Rich Morin, D'Vera Cohn, and Wendy Wang, "American mobility: Who moves? Who stays put? Where's home?" *Pew Research Center: A Social & Demographic Trends Report,* 2008, Retrieved from https://www.pewresearch.org/wp-content/uploads/sites/3/2010/10/Movers-and-Stayers.pdf
[35] Quoctrung Bui and Clair Miller, "The typical American lives only 18 miles from mom," *The New York Times,* 2015. Retreived from https://www.nytimes.com/interactive/2015/12/24/upshot/24up-family.html.

RESULTS FROM THE ANALYSIS

To supplement the correlations between wages and commute times discussed earlier, we implemented an additional measurement technique to control for the influence of other variables. These variables include the riders' education levels, ages, races, and ethnicities. We also controlled for whether riders own a car. Finally, we controlled for our main variable of interest - daily commute times to and from work. Table 3 highlights the primary findings of interest. For male riders, the results suggest that as commute times increase by 1 minute, hourly wages increase by 0.07 percent, at just shy of 95% statistical confidence.[36] Converted to hours, the results suggest that as commute times increase by 1 hour, hourly wages increase by 4.11 percent.

Table 3

The Impact on Wages from Commuting, for Males and Females

	Males	Females
For an additional **minute** spent commuting on the bus…	0.07% *more* $ per hour	0.12% *less* $ per hour
For an additional **hour** spent commuting on the bus…	4.11% *more* $ per hour	7.18% *less* $ per hour

For females, however, an additional minute of daily commuting to and from work on the bus corresponds to a decrease in hourly wages equal to 0.12 percent. Converted to hours, the results

[36] The p-value from the regression for males was 0.051, or a 94.9% confidence that this correlation is not a random occurrence.

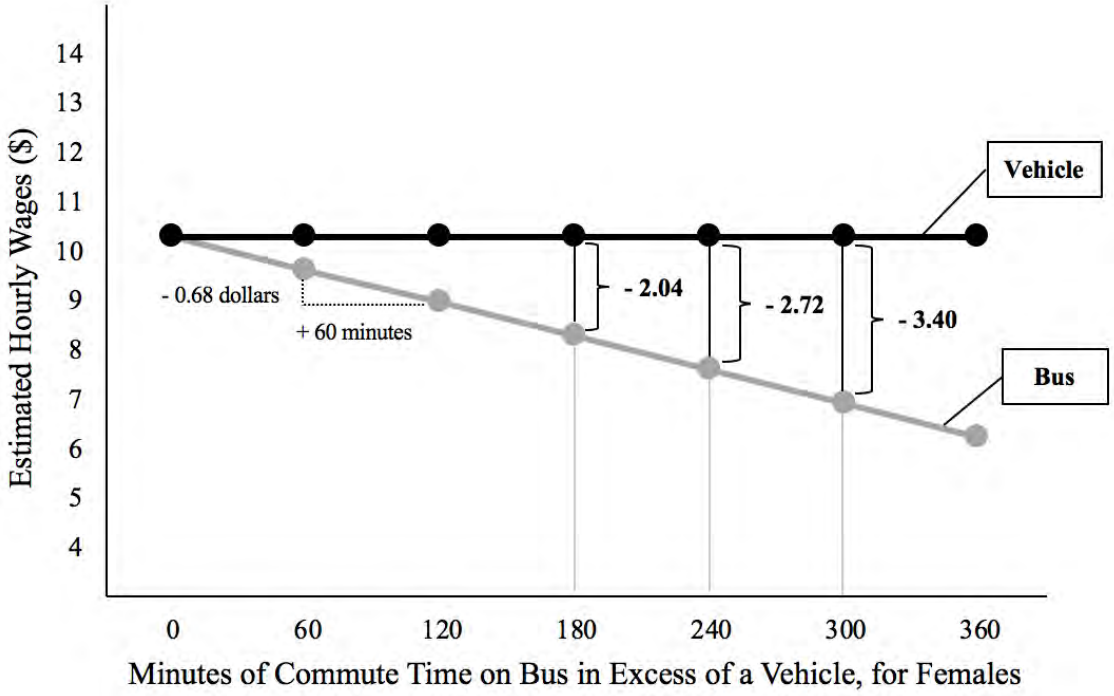
suggest that an additional hour of commuting is associated with a 7.18 percent decrease in hourly wages. By using the average hourly wage ($9.59) and average commute times (2.14 hours), it is as if the average female bus rider in Forsyth County is earning $1.46 less per hour.[37] Notice this estimated magnitude of the relationship between commuting and hourly wages is larger than the estimate from the correlation analysis shown earlier ($0.68 vs. $0.48 per hour). Since we are now controlling other variables, these new estimates provide a cleaner view of the relationship. Hence, the magnitude of the relationship is now estimated to equal $0.68 per hour, which is $0.20 larger than the estimates from the simple correlation ($0.48). Therefore, longer bus commutes to and from work are associated with lower wages for females. If such a relationship does exist, female riders are facing an implicit commuting penalty on wages. Subsequently, their climb up the socioeconomic ladder is made more difficult.

As shown in Figure 4, for every additional hour the average female rider spends commuting with the bus, she earns $0.68 less per hour, with greater than 95% statistical confidence.[38] A female bus rider who spends 240 minutes (3 hours) commuting to and from work is expected to earn $2.72 less per hour. Let us assume, for the sake of argument and illustration, that female riders in Forsyth County really do pay a commuting penalty on wages equal to $0.68 for every hour they spend commuting on the bus.[39] Let us also assume that female riders in Forsyth County only spend 1 hour commuting to and from work a day. This latter assumption is particularly *conservative*, since our estimates suggest that the average female rider spends over 2 hours on the bus commuting to and from work. By doing this, however, we can argue that we are likely

[37] *Id.* at 6.
[38] The p-value for females from the regression was 0.026, or a 97.4% confidence that these results are not a random occurrence.
[39] We have to assume this, because there are undoubtedly many other unmeasured factors that are primarily driving this effect. Later in the brief, we explore some possible culprits. It is our belief that these other variables, which are affected by the commuting experience, affect labor productivity (often measured with wages). Therefore, the commuting experience is indirectly impairing labor productivity, through these various channels.

Figure 4

Estimated Lost Earnings of the Average Female Bus Rider
For Every Hour Spent Commuting on the Bus



understating the true opportunity costs. Therefore, female bus riders *would have been* earning an additional $0.68 per hour, at the moment of being surveyed, had they been able to avoid commuting to and from work on the public bus. If this penalty could have been avoided, for example, by commuting with a vehicle, how much additional income would the average female bus rider earn annually?

The average female bus rider in Forsyth County earns $9.59 an hour. For their hour bus commute, female riders pay a penalty estimated to be $0.68 (levied against their hourly wage). Thus, in the absence of this penalty, riders would be earning $10.30 per hour, which we refer to as the gross hourly wage. The $9.59 is referred to as the net hourly wage (commuting penalty

deducted). In Forsyth County, the average female bus rider works 31.6 hours a week at their primary job.[40] Assuming they work 52 weeks in a year, their net annual income can be calculated. By commuting in a vehicle (bus penalty is avoided), the average female rider earns ($52 \frac{weeks}{year} \times 10.30 \frac{dollars}{hour} \times 31.6 \frac{hours}{week}$) = $16,924.96 in annual income. By commuting on the bus (commuting penalty is levied), the average female rider earns ($52 \frac{weeks}{year} \times 9.59 \frac{dollars}{hour} \times 31.6 \frac{hours}{week}$) = $15,758.29 in annual income. Therefore, female bus riders are facing an annual opportunity cost from the implicit commuting penalty equal to $1,166.67 a year, which is likely a conservative estimate. These results are alarming from a public policy perspective, and it is imperative that we understand the fundamental factors contributing to this gender difference.

WHAT COULD THESE FACTORS BE?

Research on so-called "psychological bandwidth" and scarcity of time can also shed light on our findings. Since female commuters are prone to have other critical responsibilities beyond work (elder care, childcare, etc.), they may be prone to make more mistakes, be less focused on the job, and work at a slower pace.[41] This is analogous to a computer with multiple applications open, and not an indication of underlying cognitive capacity. All of which, unsurprisingly, makes labor less productive. As was mentioned earlier, females value travel time more than males.[42] Time that is perceived as wasted, such as time commuting on the bus, is likely to cost more to females than males. Indeed, studies show that long commutes result in severe boredom and restlessness.[43] This, in combination with the findings described above, suggests that the perception of time being wasted has resulted in a much harsher psychological penalty levied against female riders in Forsyth

[40] *Id.* at 6.
[41] Sendhil Mullainathan and Eldar Shafir, *Scarcity: Why having too little means so much*. Macmillan, 2013.
[42] *Id.* at 24.
[43] Birgitta Gatersleben and David Uzzell, "Affective appraisals of the daily commute: comparing perceptions of drivers, cyclists, walkers, and users of public transport," *Environment and Behavior 39* (3), pp. 416–431, 2007.

County. Moreover, the fact female riders in Winston-Salem have more negative opinions of the bus system, compared to their male counterparts, is unlikely to be a coincidence.[44] Overall, these findings offer insights into the patterns we see in the data and offer support for the idea that, for employed females, commuting to and from work on the bus has adversely affected their labor productivity (measured by earned wages). If over the course of their working years, they have endured such a draining experience beyond their normal work hours, we might expect them to be less productive relative to other similar workers who have avoided such an experience.[45] Hence, commuting to and from work on the bus has likely been a contributing factor to economic immobility of female bus riders in Forsyth County, NC, given its plausible impact on labor productivity and wages.

It is important to note that some studies find that workers are willing to commute further for higher paying jobs.[46] This aligns with research suggesting that people are willing to travel further for jobs that compensate them for time spent commuting.[47] This might partly explain why we see a positive relationship between the hourly wages and commute times for males in Winston-Salem. Males typically earn more per hour and also have longer commutes than females.[48,49,50] Females with longer commutes, due to a variety of reasons (gender discrimination in the marketplace), are less likely to be making the trip for higher paying jobs, unlike males. It could

[44] *Id*. at 6. Employed female bus riders in Winston-Salem rate the quality of the bus system lower than males (2.2 vs. 2.4, on a scale from 0 to 4). On average, the female riders give lower ratings on whether the current bus system creates opportunities for them to reach their long term financial goals (6.5 vs. 6.8, on a scale from 1 to 10). They also tend to rate the bus system as being less predictable than males (6.3 vs. 6.5, on a scale from 1 to 10).
[45] This suggests that the commuting experience affects human capital formation and accumulation. Wage returns from work experience when workers have long commutes on the bus may be negatively affected, compared to the returns when workers did not have long bus commutes. Thus, the "commuting effect" enters the wage model through human capital formation. Therefore, perhaps commuting makes human capital formation less efficient because it decreases psychological health and cognitive capacity (for females).
[46] Duco de Vos, Evert Meijers, and Maarten van Ham, "Working from home and the willingness to accept a longer commute," *The Annals of Regional Science, 61*(2), pp. 375-398, 2018.
[47] J. Paul Leigh, "Are compensating wages paid for time spent commuting?" *Applied Economics, 18*(11), pp. 1203-1214, 1986.
[48] *Id*. at 15.
[49] Susan Hanson and Ibipo Johnston, "Gender differences in work-trip length: explanations and implications," *Urban geography*, *6*(3), pp. 193-219, 1985.
[50] Janice Madden, "Why women work closer to home," *Urban Studies 18*, pp. 181–194, 1981.

mean, simply, that it is harder for them to find employment in general, especially close to their homes, which forces them to travel longer distances to find work.[51] We can surmise, then, that males are traveling farther to jobs where their labor is valued more, while females are not. This, in combination with the adverse psychological impact that commuting has had on females, further sheds light on our findings.

WHAT LIES AHEAD

The abundance of results throughout the literature demonstrates there is precedent for CSEM's findings. Regardless of whether they are surprising, the fact that employed female bus commuters pay a higher price for long commutes than their male counterparts is cause for concern, given the additional "double burden" that women face. Moreover, the productivity of our local economy has been weakened, and likely contributors are the severe challenges of using public transportation to move people across Winston-Salem's sprawling cityscape. That is not unique to our city and indeed characterizes many American cities. Given the reality of tight city and county budgets, future research will focus on ways to create innovative approaches to transportation that potentially link public transit with other private and public entities, through multiple systems and approaches. With a city that has low population density, this approach is likely to yield high returns for both females and males yearning to climb the economic ladder.

[51] Studies show females in general tend to work closer to home. However, these studies are not focused on women who use public transportation and are in poverty. Job opportunities are typically not located in impoverished areas, which require longer commutes on behalf of low income female workers.