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LSE GROUPS takes place during the final fortnight of the summer term. Undergraduate students are placed in small groups; these are cross-year, interdisciplinary, and group members do not know one another in advance. Each group must then devise its own research question, and carry out all stages of a small-scale research project in less than two weeks.

The overall theme of LSE GROUPS 2019 was *The Future of Work*.

This paper was submitted on the final Thursday afternoon of the project. (Students then presented their work at a conference, on the closing Friday.)

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Minds at Work: How can a universal basic income alleviate mental health problems caused by automation and work in the gig economy?

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Abstract

Increasingly, the important economic trends currently prevalent and anticipated in the future of work include the spread of automation and the gig economy. Therefore, research is needed to inform *practice* on how these trends may negatively impact mental health problems of workers, as well as the effectiveness of a universal basic income (UBI) for providing a solution to these problems. The goal of this paper has been to expand the scope of existing research of the impacts of these economic trends and their correlation to mental health problems. This has been done by conducting quantitative analysis on pre-existing data sets to look for correlations between these economic trends and poor mental wellbeing and a survey to assess how UBI would improve the mental health of gig workers. The report also includes qualitative analyses of interviews with scholars to supplement our findings. The project's findings highlight that gig economy work and automation have a small but statistically significant negative impact on mental health compared to other forms of work. Our findings also reveal that UBI would mitigate time-related stress and income insecurities. The implications of our findings could be used to inform further research about employment and mental health.

Key Words: Mental Health, Universal Basic Income, Automation, Gig Economy

Introduction

Our research project focuses on the future of work, which encompasses all the many ways ordinary workers experience the economic changes of the future. We then narrowed our focus down to what we believe is an under-researched element of the future of work; the mental health of the workers involved,

which fills the gap in research on the subject that focuses mainly on tangible economic factors such as GDP and productivity. We further narrowed it down to research on the gig economy sector and automation, and the effectivity of UBI as a solutions, because debates on the future of work focuses largely on these factors being more prevailed.

Our hypothesis was that the fear of automation in professions where this is most prominent will increase stress levels, and that the inconsistent working hours and unstable contracts in the gig economy will have a similar effect. We also predicted that UBI will alleviate problems or worries caused by inconsistent income, but not those caused by the nature of work itself. We approached our research to test our hypothesis through quantitative analysis of pre-existing and independent data, and through more qualitative thematic analysis of academic interviews. In the following sections, we will look at a review of pre-existing literature, the methodology behind the research, a summary of our findings and analysis, and will end with a conclusion with reflections on the limitations of the project.

Literature Review

The literature review aims to first, analyse how increasing automation in the economy impacts mental health in the labour force, second, to explore psychological issues within gig workers and finally, to examine the effectiveness of Universal Basic Income in tackling consequential mental health problems using the case studies of Canada and Finland Basic Income pilot.

I. Impact of automation on mental health.

The International Society of Automation defines automation as ‘the creation and application of technology to monitor and control the production and delivery of products and services’. It is estimated by the ONS (2017) that about 1.5 million jobs in England have a high risk of automation while 13 million have a medium risk. Patel et al. (2018) found that 10 percentage increase in automation risk leads to 0.6 percentage increase in mental health problems, suggesting its adverse impacts in two main ways.

Firstly, according to the report, automation results in physiological and psychological strain when a working individual has insufficient adaptive capability for re-adaptation to technological changes. Re-adaptation effort presents in the form of increased perceptual activity and responsibility which leads to more anxious behaviors and nervous mentality at work.

Secondly, anticipation of automation creates fear of technology which heightens fear of unemployment and financial insecurity. According to McClure (2018), technophobes (people experiencing technophobia) are three times more likely to fear unemployment than non-technophobes which is found to be positively correlated with neuroticism (Anthony, Clarke & Anderson, 2000). Interestingly, mental health issues caused by technophobia are shared unequally between sexes with females having more computer anxiety than males (Durdell & Hagg, 2002).

II. Mental health of gig workers.

The gig industry forms a substantial part of the modern economy. A study by McKinsey Global institute in 2016 found that between 20% and 30% of workers are independent, but that of those only 30% voluntarily choose it as a full-time career. These “free agents” report the most satisfaction, and the dissatisfaction of the rest is on par with traditional workers reluctant to work in their field. But the independent part time workers face new challenges their traditional counterparts do not. Though this sector can provide flexible hours for workers and cushion unemployment (McKinsey 2016), it can impact negatively on the mental health of these workers, due to the inability to take a break, the lack of community, unpredictable contact times, and the need to cultivate an image of themselves linked to their brand (Emma Jacobs, Financial Times, 2017).

One article in the Company’s Secretary Review found that out of 1,000 gig workers, 61% had experienced stress due to precarious employment (Oates, 2017). Moreover, Paul Willeil found that employees in Canadian hotels under temporary contracts do not feel that they can progress in their job. These conclusions are also supported by Bajwa’s 2018 study (the Journal of Globalization and Health) of the wellbeing of workers in the gig economy, concluding that the rise of precarious work resulted

from globalization and neo-liberalization of the Canadian economy was having poor effects on the gig workforce. (Bajwa et al 2018)

III. UBI as a solution to mental health issues.

The International Monetary Fund defines Universal Basic Income (UBI) as an income support mechanism intended to reach all people with no (minimal) conditions. In the study 'Universal Basic Income: A psychological Impact Assessment', UBI is expected to 'weaken the connection between the ability to work and the right to a reasonable quality of life' which lessens mental health problems (Murali & Oyebode, 2004) and improve well-being from five aspects of psychology: agency, meaning, trust, security and connection. For instance, UBI confronts 'cognitive' Bandwidth scarcity (scarcity of resources) which 'impedes sound decision', potentially worsening health outcomes (A Universal Basic Income: the answer to poverty, insecurity, and health inequality).

The effects of UBI on society were tested by Finland over two years 2017-2018 in which 200 random people (25-58 years old) who received unemployment benefit were given partial basic income of 560 euros/month. In the paper 'Finland: Basic Income Experiment', it was found that UBI leads to better well-being shown by 'self-perceived assessment of happiness and life satisfaction', more positive viewpoint in others and in societal institutions as well as confidence in the future. This is substantiated by the overwhelming support UBI gained, going up to 70% of public acceptance of the scheme and about 50% strongly agree that it should be adopted permanently.

Methodology

The first part of the methodology is the interviews with academics. The function of the interviews in the methodology was to provide supplementary qualitative data to an otherwise heavily quantitative study. To this end, we interviewed expert on labour markets, Professor Alan Manning and expert on UBI, Dr. Malcolm Torry. They were then interviewed face to face with a researcher for approximately 25 minutes each on separate occasions. Both interviewees knew of our research topic, and received differed questions pertaining to their field of study, but only one knew of the question beforehand. The

interview was semi-structured, and the interviewer posed thematic based questions, but followed tangents they believed would be relevant to the report. It was followed by thematic analyses of the interview transcript, which allowed us to find conclusions relevant to our report in the data. This section of the methodology has some limitations; we were only able to interview two academics due to time constraints, and we were unable to interview anyone on the topic of mental health for the same reason. Additionally, as the academics were not experts in all the fields we were researching, we could not ask all the questions we wanted (see Appendix 2 and 3).

The second strand of our analysis involved using and analysing the “Next Steps” data set, which followed the lives of ~16000 people in England born between 1989-90. The data has information on cohort members education, economic circumstances, personal wellbeing, traits and attitudes – for different stages of their life. Importantly, it has information on what type of work the cohort members are doing at age 25 and measures of their mental health. The mental health measure involved asking cohort members 12 questions from the General Health Questionnaire, used to diagnose minor psychiatric disorders. The participants answer each question on a scale from 1-4, where a higher number indicates a worse mental state. We summed these responses to create an overall measure out of 48 (12 Q * 4). We used this overall measure and whether the individual was on a zero hours contract to run an OLS¹ regression, investigating how being on a zero-contract impacted the overall measure. We omitted individuals who were unemployed, disabled or in education (or had something other than employment as their main activity). Additionally, we were able to control for a significant range of background variables, giving us an R² around 50%.

The online survey was done with 100 respondents to find out the effect of hypothetical provision of UBI on the mental health of current gig economy workers. To ensure the sample’s representativeness of the population, they were gathered through social media and online communities for a range of platform jobs such as private hire drivers and freelancers. One limitation to the sampling process was volunteer bias, as the survey link was a VR (voluntary response) link. However, voluntary participation

¹ Ordinary Least Squares. A method of statistical analysis.

was inevitable due to the sensitivity of the topic ‘mental health’ and the nature of the online survey. The collected sample consisted of approximately 70% male and 30% female respondents across all age groups. The first part of the survey asked about the satisfaction with their current work and working environment. The second part asked about their mental health and the last part asked about the effects of the hypothetical provision of UBI on the respondents’ emotional state and behaviours. The questions also included the perceived risk of automation before and after the hypothetical provision of UBI. After we obtained the survey results, we performed descriptive analysis as well as a paired sample t-test to ensure our results in the decrease in stress levels were significant (see Appendix 1).

Results and Discussion

Interviews

The two interviews took different “global themes”; the first was focused on the changes in the labour market and the second on UBI. From the first interview, the themes were focused on the balance of power between workers and employers that presented itself through shifts in the labour market and the gig economy. Manning was optimistic about the balance of power between employers and workers remaining stable in the future. He described the gig economy as an attempt to move risk from employers to workers, but also stated that he could see no significant data trends away from employee satisfaction, and that any mental health problems were part of wider issues, not the nature of work. The themes of the Torry interview were how UBI could address income precariousness, how UBI could mitigate health problems. He compared past security of household income to the modern risks of changing industries creating income insecurities, and that short term flexible contracts create more risk for workers. Precarious work, he emphasised, would lead to more and more people relying on the benefits system, forcing applicants to endure “degrading” and “stigmatizing” applications for benefits. UBI would contribute to the removal of these worries, especially for individuals who are completely reliant on the gig economy for income. Additionally, to support his claims that UBI would increase health improvements he cited studies from Namibia, India and Canada, where small communities with a UBI reported less anxiety about whether they’d have enough income.

The conclusions for these interviews include that the negative impacts on mental health of the gig economy may not be as prevalent as supposed due to the high level of job satisfaction reported in the modern economy, and that contractors in the gig economy would offer better terms to workers in a labour market with high demand for them, making better treatment more likely. However, they did also show that UBI would mitigate any financial worries not only by providing a secure source of income for those on insecure contracts, but also it would avoid the stress of applying for state benefits.

“Next Steps” Data Set

The regression results provide evidence that being on a Zero Hours contract (which is part of the definition of being in the Gig Economy) results in a $\sim +0.5$ change in the Overall Mental Health measure – which is a worsening. The results are significant with robust standard errors at the 5% level. However, since the standard deviation in the Mental Health Index response (measured out of 48) was ~ 10 , this is a small impact. However, since we expect the gig economy to grow further as technology reduces transaction costs, this impact will become more consequential.

	(1)	(2)	(3)
On Zero Hours Contract	0.538** (0.173)	0.405** (0.147)	0.463** (0.150)
Whether currently cohabiting		0.659** (0.217)	0.437* (0.218)
Measure of number of leisure activities taken		0.279*** (0.0523)	0.250*** (0.0537)
How often participant meets family		0.659*** (0.122)	0.662*** (0.128)
Self-assessed physical health		1.823*** (0.256)	1.561*** (0.260)
How participant feels they are managing financially (higher is worse)			0.985*** (0.252)
Weekly wage (in GBP)			-5.84 * 10 ⁻⁶ *** (7.09 × 10 ⁻⁷)
_cons	-0.533 (1.474)	-4.277*** (1.293)	-3.871** (1.268)
N	5254	5254	5254
R ²	0.400	0.526	0.536

Robust Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Other Controls include: Sexual Orientation, Exercise Frequency, Age of first sexual intercourse, Current accommodation type, Year since moving out of parent's home, Whether went to University, Socio Economic Classification as adolescent, Ethnicity, Gender, Weight, Type of Voucher selected (Amazon vs Love2Shop), Use of Social Media, Avg Hours of Sleep, Height, Whether work has shifts, Whether participant works overtime, How Trusting is participant

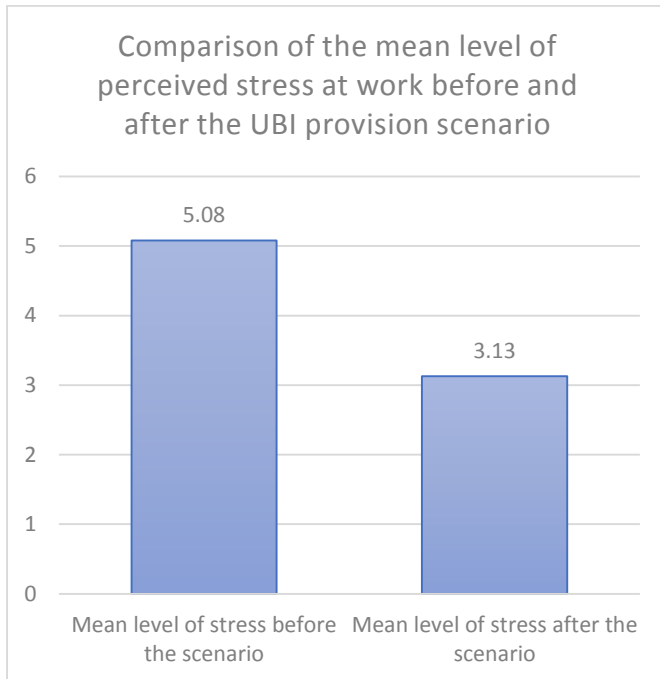
We further note that the participants thinking they aren't managing well financially results in an almost 1-point worsening of mental health outcomes. This provides evidence for our hypothesis that financial wellbeing and being in the gig economy impacts mental health.

Survey

The survey data suggests a positive impact of UBI provision on the mental health of gig economy workers, in relation to their stress level and financial (in)security.

This can first be observed through its effect on the stress level of the participants. Stress was identified as the most prevalent mental illness symptom experienced among the set of responses, with 38% of respondents stating they have experienced stress. Also, majority of the respondents seemed to be stressed in their work, as the mean indicated level of stress at workplace was 5.08 in a scale of 10, with

0 denoting ‘not stressed at all’ and 10 denoting ‘extremely stressed’. This mean stress level was compared with the mean level of stress perceived given a scenario in which the government provides them with UBI, which is illustrated in the figure below.



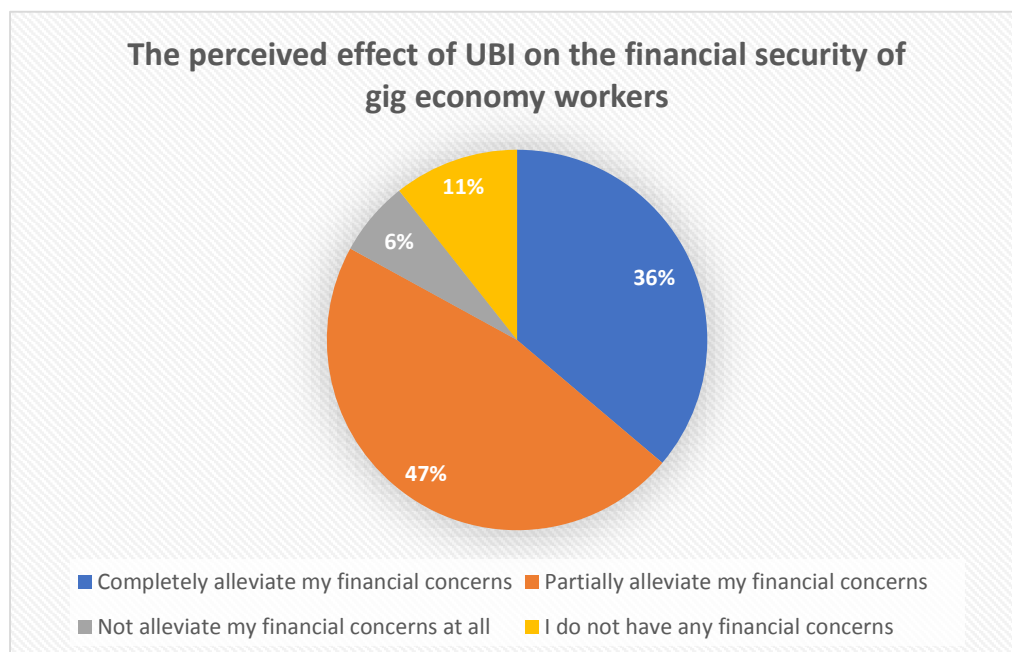
This corresponds to 19.5% difference in the mean. Therefore, we can interpret this as a perceived positive impact of UBI on the stress experience of gig economy workers.

Next, we conducted a t-test to find the significance of the change in mean stress levels before and after the hypothetical provision of UBI and verify these findings.

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	How stressed do you feel in your role on a scale of 0-10 (0 being not stressed at all and 10 being extremely stressed)? Move the scale to select your answer. - Given that you have this unconditional basic income of £1600 per month in addition to your current income, how stressed would you feel in your role on a scale of 0-10 (0 being not stressed at all and 10 being extremely stressed)? Move the scale to select your answer.	2.071	2.545	.256	1.563	2.578	8.097	98	.000

The results of the t-test showed that we can reject the null hypothesis that there is no significant difference in the mean stress levels. This was significant at the 0.001 level. As a result we can conclude that the reduction in stress levels from the introduction of this hypothetical basic income is significant and valid to draw conclusions from within this sample. This follows our wider literature review and the Finnish case study that UBI can increase general life satisfaction through its stress relieving qualities and reducing financial concerns. However, more importantly we show that this could be true from a UK perspective by using a UK sample set of respondents. Furthermore, we confirm Dr Torry’s claim that UBI improves general wellbeing through its stress-relieving qualities by providing conclusive and significant data.

Another area UBI seems to have an effect on their mental health is their financial (in)security. Regarding the effect of financial concerns on their mental health, a majority agreed (71%), with 40% of participants responding “definitely yes” and 31% “probably yes”. It can thus be identified that financial insecurity is one of the major mental health issues to which gig economy workers are susceptible. When asked whether the provision of UBI would alleviate their financial concerns, a significant majority of participants agreed (83%). This is illustrated in the figure below.



Therefore, gig economy workers perceive that receiving UBI would have a positive effect on their mental health, vis-à-vis their experience of financial (in)security.

The effect on UBI on the perceived risk of automation was insignificant, with only a minor change in the mean observed before and after the scenario - 3.59 and 3.51 respectively - where 1 was “extremely worried” and 4 “not worried at all”. It can be interpreted that automation risk seems to have a minor effect on their mental health, with 73% of participants feeling that they have zero concern about it.

Conclusion

From our regression analysis of the next steps data set, we found that having a zero hours contract leads to worsened mental health. This supports our hypothesis that perceived financial wellbeing impacts mental health. From the survey, we found that the perceived risk of automation was negligible as respondents had few concerns about this economic trend. However, this may just mean that our respondents had a paucity of information regarding the future of automation, which supplements our literature review that suggested the importance of accurate and widely available education on the automation risk. The survey demonstrated that Universal Basic Income, specifically a sustainable one, could alleviate mental health issues caused by these two economic trends. Our respondents found that not only did financial concerns significantly reduce but also their stress levels. However, this appears to support our hypothesis to a limited extent as there are limitations in the Next Steps data set showing poor mental health and the number of respondents being an adequate sample size. We conceptually bring together UBI, automation, the gig economy and mental health which are all important aspects of the future of work. Our research has implications for interventions around economic policy specifically in the case of automation, UBI, and mental health in work.

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UBI Mental Health

Start of Block: Default Question Block

Hello, and welcome to our survey! This survey is intended to collect data for a research project for the London School of Economics. It will be anonymous, you must answer all questions, but you may quit the survey at any time; if you do so, your data will not be saved. Feel free to leave your email at the end of the survey for a chance to win a £10 Amazon Voucher!

Q1 What is the nature of your work?

- Full time (1)
 - Part time (2)
 - Self-employed (7)
 - Zero hour contract (8)
-

Q2 Which of the following industries do you work in?

- Accounting (1)
 - Administrative (2)
 - Customer Service (3)
 - Marketing Operations (4)
 - Human Resources (5)
 - Sales (6)
 - Finance (7)
 - Legal (8)
 - IT (9)
 - Engineering (10)
 - Product (11)
 - Research & Development (12)
 - International (13)
 - Business Intelligence (14)
 - Manufacturing (15)
 - Public Relations (16)
 - Other (specify) (17) _____
-

Q3 How long have you been in your current role?

- Less than 1 year (1)
 - 1-2 years (2)
 - 3-4 years (3)
 - 5 or more years (4)
-

Q4 What is your gender?

- Male (1)
 - Female (2)
 - Other (3)
 - Prefer not to say (4)
-

Q5 What is your age?

- Under 25 (1)
 - 25-34 (2)
 - 35-44 (3)
 - 45-54 (4)
 - 55 or older (5)
-

Q6 How satisfied or dissatisfied are you with your ability to do interesting work in your role?

- Very satisfied (1)
 - Slightly satisfied (3)
 - Neither satisfied nor dissatisfied (4)
 - Slightly dissatisfied (5)
 - Very dissatisfied (7)
-

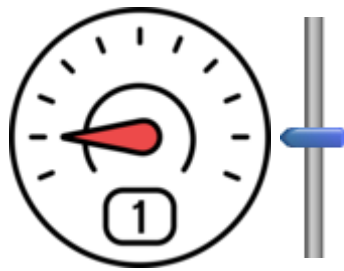
Q7 How satisfied or dissatisfied are you with your opportunities for promotion or career progression?

- Very satisfied (1)
 - Slightly satisfied (3)
 - Neither satisfied nor dissatisfied (4)
 - Slightly dissatisfied (5)
 - Very dissatisfied (7)
-

Q9 Do you work on a team?

- Yes (1)
 - No (2)
-

Q10 How stressed do you feel in your role on a scale of 0-10 (0 being not stressed at all and 10 being extremely stressed)? Move the scale to select your answer.



- 0 (0)
- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 (6)
- 7 (7)
- 8 (8)
- 9 (9)
- 10 (10)

Q11 Automation is the replacement of jobs by artificial intelligence or robots. How worried are you about your job being replaced?

- Extremely worried (1)
- Moderately worried (2)
- Slightly worried (3)
- Not worried at all (4)

Q12 How satisfied or dissatisfied are you with your current workload?

- Very satisfied (1)
- Slightly satisfied (3)
- Neither satisfied nor dissatisfied (4)
- Slightly dissatisfied (5)
- Very dissatisfied (7)

Q13 Do you feel that financial concerns impact on your mental health?

- Definitely yes (1)
 - Probably yes (2)
 - Might or might not (3)
 - Probably not (4)
 - Definitely not (5)
-

Q14 Have you experienced mental health problems whilst in your current role?

- Definitely yes (1)
 - Probably yes (2)
 - Might or might not (3)
 - Probably not (4)
 - Definitely not (5)
-

Display This Question:

If Have you experienced mental health problems whilst in your current role? = Definitely yes

Or Have you experienced mental health problems whilst in your current role? = Probably yes

Or Have you experienced mental health problems whilst in your current role? = Might or might not

Q15 What mental health problem(s) did you experience?

- Prefer not to say (1)
- Stress (2)
- Post traumatic stress disorder (3)
- Anxiety (4)
- Depression (5)
- Other (6) _____

End of Block: Default Question Block

Start of Block: Government

Q16 Universal Basic Income is the provision of a certain amount of money by the government every week which replaces every other welfare payment and is enough to cover minimum living standards **(it is given in addition to your current income)**. It is provided unconditionally, regardless of employment status (whether or not you have a job, you would always have **at least** £1600 per month), and to everyone regardless of wealth or income.

Imagine a scenario where the government gives you £1600 per month as a basic income **in addition to your current income**. Answer the next questions with this in mind.

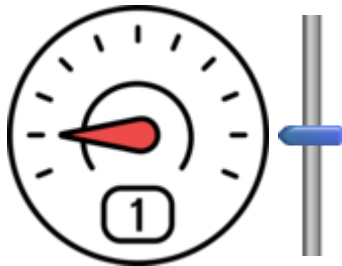
Q17 How would your employment status change after you are given the unconditional basic income of £1600 per month **in addition to your current income**?

- I would leave my current job (1)
 - I would stay in my current job (2)
 - I would work less but stay in my current job (3)
-

Q18 Which of these are you more likely to do after you are given the unconditional basic income of £1600 per month **in addition to your current income**?

- Look for a new job (1)
 - Spend more time on leisure (2)
 - Spend more time with my family (3)
 - I would pursue my dream job (4)
 - I would train to gain new skills (5)
-

Q19 Given that you have this unconditional basic income of £1600 per month **in addition to your current income**, how stressed would you feel in your role on a scale of 0-10 (0 being not stressed at all and 10 being extremely stressed)? Move the scale to select your answer.



- 0 (0)
 - 1 (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (5)
 - 6 (6)
 - 7 (7)
 - 8 (8)
 - 9 (9)
 - 10 (10)
-

Q20 Automation is the replacement of jobs by artificial intelligence or robots. Given that you have this unconditional basic income of £1600 per month **in addition to your current income**, how worried would you be about your job being replaced?

- Extremely worried (1)
 - Moderately worried (2)
 - Slightly worried (3)
 - Not worried at all (4)
-

Q21 Would this unconditional basic income of £1600 per month, **in addition to your current income**, alleviate your financial concerns?

- Completely alleviate my financial concerns (1)
- Partially alleviate my financial concerns (3)
- Not alleviate my financial concerns at all (4)
- I do not have any financial concerns (5)

End of Block: Government

Start of Block: Block 2

Before you submit, please write below if you have any queries or comments about the survey.

End of Block: Block 2

Appendix 2

Interview transcript –Dr. Malcolm Torry

R: Ross

M: Professor Malcolm Torry

R: My first question is really about your interest in basic income because it is a contentious area of the future of work and future of welfare benefits. And as you said yourself, you can't really predict what's going to happen. So why do you believe it so necessary to have a universal basic income as opposed to other measures of social welfare?

M: I would not say 'opposed' to other measures of social welfare. The idea of a basic or citizens income, it is not a solution to all the problems we face. There are some utopians in this and they think that it would solve everything. It really wouldn't. It would make a contribution in the current circumstances and in some possible futures. It would be a partial solution to some of the problems that we now face.

R: Yeah, what kind of things were you thinking of when you say some of some of the problems?

M: I've started to think a bit more positive. That is, what kind of society do we want rather than what's wrong with the society that we now have, and parts of our social worker structure look for a society in which certain level of basic need is met for every member of the community. But the National Health Service and publicly funded education up to secondary level, these are parts of the life of a democratic society that recognizes that everybody has a certain level of need. They are also investments; that is, you're investing in people so that they are

healthy, they have education. So basic income would have the same effect in our income structure that those have had in those other welfare fields. That is, it will provide a secure foundation on which people could build just like Health Service and publicly funded education. It would provide a level of security that would move from the positive to what's wrong now or becoming more wrong.

Many families now find that their entire income strategy is a risk. In the days of my grandfather, he left school at 14, went to work for a large engineering company as a tool maker apprentice and that's where he retired from, when he was 65. That was his life. There were absolutely no insecurities in his household income strategy. That's a very rare experience now. Earned incomes are constantly at risk from changes in industry, from changes in companies, with trade unions not being strong as they were, the ways in which pay used to keep up with prices no longer really work.

And increasing numbers of contracts are quite flexible. Flexible is fine for industry, it is very good for industry. It's not so good for people who work in industry. Similarly, the income structure, thanks for the benefit system, is often a risk. It doesn't take much to lose your in-work benefits to out of work benefits. It can all suddenly disappear for weeks on end. So to look at that negative scenario that we are increasingly facing a basic or citizens income would help to solve that problem because it will provide a level of security. There isn't a feasible basic income scheme that would provide for everybody's total needs. Of course, it just

wouldn't work like that, but the level of security will be very good for every household.

R: Okay, I see. We'll talk a bit more about kind of the effect of basic income in combating certain precarious contracts in a bit. So what your analysis is saying is what kind of society do we want it to be and what do we want to provide for, and some of the areas which more and more researchers are focusing on is mental health and subjective well-being. And so assuming kind of that Universal Basic Income is a step towards a society where everyone's health and well-being mentally is focused on and enhanced, would Universal Basic Income at all make an impact on that and if so, how?

M: Looking again at our current means-tested benefits system I began to understand what their effects are more than 40 years ago when I worked in a sub??? benefit office in Brixton, administering means-tested benefits for two years. That was my education in this field. I recognize the damage that the system was doing, not only to the claimants but also to the other side, the members of staff sitting behind me as well and it hasn't got any better. It's got a great deal worse than it was then. The current benefits system imposes a division on our society because people who are receiving assistance benefits suffer under one set of rules and people who don't receive them and bear tax experience a very different set. And these rules are seriously degrading, stigmatizing if I see and so on. And the inquiries that are made into people's private lives, because the means-

tested benefits system is based on the household of the individual, are highly intrusive and that is damaging. Errors are rife in the system. It's very easy to accidentally criminalize yourself.

And it is very difficult to see what's right about the means-tested benefits system in terms of how it treats people. And stigma and division and the degrading treatment that people experience, particularly now that the sanction's regime is so extreme, are entirely damaging to mental health. That's the way it works; mental health is affected, then your physical health has to be affected as well. "I, Daniel Blake" is a very true film, so it was like almost everything in that would happen in real world. There's just one thing that wouldn't have happened. The solicitor would never have told Daniel that he was definitely going to win his tribunal cases because they never know. It's too unpredictable for that. Can't say, 'I know you're going to win this'.

Anyway, so the pilot projects that have occurred around the world with a genuine basic income, there have been just two: one in Namibia and one in India. They have shown considerable effects on people's health levels and for instance on reductions in hospital admissions and so on. There have also been experiments, which are not strictly speaking experiments on the basic income. The Finland's scheme is very close to them. It wasn't a community-wide experiment but it simply chose 2000 randomly selected unemployed individuals and made their benefits unconditional for two years. Even though that was a very minor

experiment, it showed considerable improvements in wellbeing for those that the pilot sample compared with a control sample. An interesting result, which some of the politicians rather liked, was the increase of people's trust in politicians. It seems to improve people's relatedness and that's a very important part of the mental health of not only the individual but also the society as a whole. The experiments in minimum income guarantees in 1970s, things were not basic income. They were sitting at the level of income below which households will not go to poor for a short period in the whole towns, there was like Canada, Manitoba. The results of those have recently been c??? all over again by academics. They discovered considerable health impacts, that is in health improvement in that community because there wasn't such an anxiety about whether you're going to have enough income. That rather suggests that the real basic income would create considerable improvement in people's mental and physical health.

R: The next question is going back to contract, about instable contracts. So gig economy, which is proliferating in the modern day and spurred on by the rise of digitalization and globalization of tasks, led to precariousness. How would Universal Basic Income would have an effect on the workers in this sector?

M: Gig economy is a particular example of what we were discussing minutes ago. The insecure world means that it's very difficult for people to plan their domestic income strategies. It's a very difficult thing to plan at all. And that's fine for the

industry's concern; it makes them more efficient, ??? is absolutely right. In one sense that I think is wrong with that is given that it is a global phenomenon, it's going to be impossible for any individual country to stand out against the trend. We all understand that problem. The problem though is that it means that the workers are suffering the effects of the increasing flexibility of the employment market.

First of all, positively a Citizens Basic Income would provide a level of security which nothing would ever take away to be completely secure layer of income on which you could then build. So the proportion of your income that you would then be insecure, you ??? which would be enormous systems, people who rely entirely on the gig economy.

Looking at the current situation, if you are on the citizens benefits whether that's working tax credits, child tax credits or all the new Universal Credit, these systems find it very hard to cope with flexible earnings. They're fine. If you have a full-time job that has fairly stable earnings and you only have the one job and you live in a stable household. That's what these means-tested systems were built for and within that context they are very effective. Of course, that's a context that many people will recognize it more with everything much more flexible. These systems just don't work. If you have more than one part time job and you are on either working tax credits or universal credit, it is very difficult to administer them and you can find yourselves with one month far too little income and another

month you are asked to pay back the income you've already received from the benefit system and so on. In a world that's going to be increasingly insecure, we're going to need a layer of security and citizens basic income provides that.

R: So the other thing I wanted to ask you about is your current research and the use of the Euromode dataset as a means of finding a feasible way of implementing basic income as you say, so consider your findings. What would that look like? What would a feasible basic income look like and what do you mean by feasibility? What are the issues?

M: The concept of feasibility is complicated. There are many different kinds of feasibility, not just one. There's financial feasibility, which you're wanting to look at. Perhaps even more importantly psychological feasibility, that is would the concept of a basic income be understood and political feasibility would build on that, that is would it be possible to provide basic income to get through the political ideology system that we live with, would it cohere with the ideologies with which our politicians operate. The policy process feasibility - asked whether you could get the idea through the policy process which is incredibly complex, evolving vast numbers of individuals institutions. So there are lots of different kinds of feasibility and to say that because something becomes financially feasible, this feasible is not necessarily true.

However, financial feasibility is going to be essential and there are two basic kinds of financial feasibility. One is, can we afford it. And the answer to that will

always of course be yes. It's always possible to afford the new better service. Whether you can within the current public expenditure limits is a very different question. We normally say something is financially feasible if it won't add to public expenditures, and so one of the things that I do and I do research using ???, which is a computer program that contains all of the tax and benefits system regulations and you pass through it, the ??? survey data, which is they drop 40,000 or so individuals to discover the real world effects of current system and of any reprogramming that you might do to the system to create new benefits. And that's where my statistics all come from. What I do is fix a number of parameters, then I say this would be a financially feasible scheme if it didn't raise income tax rate by 3% or by more than 3% and if you could pay for it without adding any additional public expenditure. I also set the current period that ??? reduce poverty levels and reduce inequality.

A second kind of financial feasibility is that the changes that you make shouldn't make poor households poor when you make any change to benefits or tax system. It's very easy to make poor households poor even if you don't intend to simply because of the complexity of the system. Whenever you implement a basic income, you're going to have to change the existing tax benefit systems, and you could easily make poor households poor. So I set a criteria that you must not, that is there will always be a small number of losses that you can't get rid of but you try to keep the level of losses to say 2 percent of households, but suffered losses

??? reported 5 percent if they're in the lowest earnings decile. So I set the criteria. I then use Euromod, then the labour intensive trial and error method to see if I can find a basic income scheme that will fit those criteria. If I just find one scheme either that fits them or very nearly fits them then we can say that the idea is feasible. There is such a scheme. But whether there's more schemes, I don't know because once I found I stop looking because it just takes a long time and big change to the parameters, running a system again.

R: All right. Well, that's interesting to see what kind of parameters are in priority of Universal basic income. You mentioned the changing relationship between kind of politicians and citizens and some of the case studies. I remember talking to one of the LSE economists in another interview called Alan Manning and he was talking about kind of the negative impact of like how, if we were to introduce Universal Basic Income, it would expand the state and would collect registries of all these kind of data about people and taxes. And so that was more pessimistic attitude of Universal basic income and the state. So I just wondered what are your thoughts on that relationship? Like how will it change the relationship of the citizens to the state?

M: It would be opposite to what you have just described. But at the moment, if you are on the citizens' benefits the state intrudes in a major way into your privacy. It wants to know about your personal relationships, wants to know about your income, it wants to know what kind of details about you. And not only that;

it insists that each household should be treated as a unit rather than each individual, which means that there is no privacy within the household, in relation to income and other financial matters, simply because any claim from the citizens benefits has to be made by the household as a whole. Taxpayers are not treated in this way. Taxpayers, for instance, just take one particular rule where the taxpayer fills in the tax return, then the presumption is made: what's written on there will be true. And very rarely the tax authorities ask you for evidence.

The precisely opposite case is when someone claims this citizens benefits, evidence has to be produced before someone is believed. It's a very different world and that kind of state interference in people's lives is an enormous intrusion into people's private lives. For Citizens basic income, all the government needs to know, is first of all your date of birth and secondly how to send you the money. That's it. That is not interference in someone's life.

R: My final question is about one of your books, it was titled 'Universal Basic Income: a Christian social policy'. What do you mean by a Christian social policy?

M: Everybody has their own motives for pursuing an idea. And many of us have very mixed motives, a variety of different motives which come together to make an idea attractive. So my motives are diverse. One of them is the mess that I saw citizens benefits were making. ??? Another is that I am a Christian, and at the heart of the Christian faith is the idea of unconditional love, grace of not having

to earn the gifts that we receive. And it's that that motivates me among other motives to pursue the idea of basic income because it will represent in our benefits and tax system, the unconditional grace at the heart of the Christian faith. There are many other aspects of the Christian faith, which you can parallel with the characteristics of basic income - the kind of society that it will give to us.

Appendix 3

risInterview transcript – Professor Alan Manning

R: Ross

A: Prof Alan Manning

R: So what are the kind of key elements of job market you are interested in. There are things about minimum wages and monopsony. Could you explain those?

A: I've been interested for a long time in minimum wages and how one can use minimum wages to address inequality in the labour market and the evidence on what the impact of minimum wage is. More recently that fits into the wider question about how you achieve an appropriate ??? between employers and workers in the labour market. I'm also interested in others like policymakers and...

R: So given that your main focus is on maintaining ??? so to get the most out of the economy, where does the rise of the gig economy play into that?

A: The rise of the gig economy is I think. First you said why has the gig economy come. New technology has enabled the gig economy these platforms to be established whereas that kind of arrangements were just not feasible before. Second kind of reason why has the gig economy become established is because there have been tax and regulatory advantages to organising work in that kind of way. So there are debates about whether the people who work for platforms are employees or self-employed contractors and so on. And the legal framework hasn't kept up with the emergency of those platforms. Third reason is that it may be that some policies like the minimum wage encourages the employers to first of all employ workers as independent contractors if they can because there is no minimum wage for the self-employed and also encourage them to only pay for hours of work that for example, contracts become, in the past employees worked for 9 to 5 and some of the hours had been quiet but they would pay wages that averaged the whole day and they sort of found that was inappropriate. And now they have to pay minimum wage for each hour you actually worked. ... So those were the issues. I don't think you should exaggerate how big gig economy is and I don't think you should assume it's gonna get bigger and bigger.

R: But why not because gig economy has been around for ages, as long as the task-based economy has been around. The difference is the modern world the digital technology enabling these tasks to be globalised and done in a much

quicker rate. So why should we assume that that's not developing in the future as tech gets better?

A: It depends on what you mean by gig economy. One of the features is that it has been moving risk from employers onto workers, so that whereas before if things were a bit quiet the employer had to keep employing the worker and take the risk themselves whereas now they push the consequences onto the workers. But because workers don't like the insecurity if the labour market is tied as it is at the moment, what you see is employers having to compete to offer more attractive terms to workers. And so if they offer less attractive conditions they begin to lose workers. I think there is a bit of evidence for that. So ??? the form of gig economy and precarious contracts, temporary contracts but the fraction of temporary contracts was higher 25 years ago than it is today. I don't think it is right to think that there is extra whole movement towards employment being on that basis.

R: Feeding on from that, the impact on workers, what would you say about the changing subject experience of the workers. How was change in the mental state or ideas. I remember reading one of the ?? talking about kind of change in people who work in the gig economy - they stop seeing their workers or members of the work so what are the psychological impact of that? What would be your insights?

A: The simple way of looking at it is there are a number of surveys asking workers how satisfied with their jobs either overall or a number of aspects of it, one of

them being job insecurity and so on. Those, if anything, have gone up over time. So job satisfaction has gone up over time rather than down. I know that people saying it's gone but often they are not looking at any statistics. I think there are issues about wider mental health. There is a wider debate about more mental health issues are in our society and there is better diagnosis and the role that work plays in that. So I think there are some interesting questions but again I don't think it's really... One of the difficulties is that there is quite a bit gap between the statistics on what is actually happening and what other people are saying what's happening. They don't line up at all. There is an organisation Resolution Foundation they're sort of a thinktank they do a lot of work on inequality and so on. They published a report last week on residential mobility of those jobs. Whereas you get impression from what most people write, like there is no more job alive, people are much insecure, there is much more mobility, the data set says the exact opposite. The mobility is going down, people are on their jobs longer, people have more houses. So there is a slight disconnect in this area.

R: That's interesting to me because I remember reading about, like a lot of your research was about job polarisation kind of it, the change in economy like some jobs are quite nice and secure and well-paid when others not be. Do you think gig economy or even kind of another impact of future develops like automation will lead to more job polarisation?

A: I do think that technology changes the labour market and make some jobs go out and other ones not decline and it always has done. That's not any different from before. And the sorts of jobs that technology replaces workers varies from time to time. So polarisation is about how technology is replacing workers who were in the middle of the distribution. But I don't know if that is inevitable that it will go on and on forever. There are some arguments for example that there are professions that would be more affected in the future, but a lot of professions what people like to think of as being expert, decision making are actually far more routine. So there is a whole thing about if you run a few tests and put some symptoms in the computer programme then they can make better diagnosis than the doctor quite a lot of the time. And the ability of the computers to do that goes up every time whereas most ability of doctors stay the same. So I don't think it's inevitable that what we have seen over the past twenty years is reproduced in the future. And I would say don't think it's inevitable that jobs that are seen as being in the phrase I used which I regret, lousy jobs, I don't think they have to be badly paid as they are. And people are often care more about how much income is provided with that job than what the job actually is itself.

R: What is your opinion about UBI and could it address any of the problems in the gig economy?

A: First of all I think it's probably completely orthogonal about technology of work. So UBI I think could have increased the gig economy. Because it is very

hard to regulate the people working in the gig economy. So you get people getting the ubi and working on these platforms out of the sight of the states and that actually makes it all come the easier for ubi than the opposite. I think ubi as a whole is an old idea. And I think it's also a right-winged idea. So historically it was favoured more by the people on libertarian that kind of side. So I think it would probably end up more like that when you get down into the nuts and bolts of how you would implement it.