Impact of a Precarious Employment Situation on Short-term Fertility Intentions: A Comparative Study of Migrants and Natives in Sweden

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Abstract

Over the past decades, the world has witnessed significant social and demographic changes, including a declining fertility rate in Europe, a decrease in job security and flexibilisation of the labour market, and an increasing flow of migrants to the Global North. Especially migrants have been affected by precarious work arrangements. However, little research has been conducted on the specific impact of employment uncertainty on migrant fertility intentions. Using binary logistic regression models, this study looks at the effect of both objective and subjective indicators of a precarious employment situation on short-term fertility intentions using the Swedish GGS-II survey data. The analysis includes both migrants and Swedish-born individuals and covers men and women separately, which is rare in previous research that has focused chiefly on women only. The findings suggest that the impact of unemployment on fertility intentions differs between migrant and Swedish-born women and men. Specifically, being an unemployed migrant, compared to being unemployed and Swedish-born appears to increase the likelihood of expressing a positive fertility intention. The time since arrival for female migrants does not moderate the effect of employment status. However, for female migrants in education who have resided in Sweden for at least five years, the probability of stating a positive fertility intention is substantially reduced compared to newly arrived migrant women. Moreover, the probability of expressing a positive fertility intention increases when a migrant woman perceives job loss as likely in the near future relative to Swedish-born women with similar job security perceptions. Regarding men, the results are less conclusive, with no substantial differences observed in the impact of the likelihood of job loss on fertility intentions between migrant and Swedish-born men. The study suggests that despite the importance of the institutional setting for fertility decision-making, other mechanisms are at play, too: migrants and Swedish-born individuals seem to respond differently to labour market uncertainties and especially unemployment.

Keywords: precarious employment, short-term fertility intentions, migrants, Swedish-born

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1. Introduction

The world has experienced profound demographic and social shifts in the past decades. The fertility decline in Europe that began in the aftermath of the Great Recession has not shown signs of recovery (Comolli, 2017; Comolli *et al.*, 2021). Even in the Northern welfare states, which were previously thought to be the exception to the rule, fertility keeps decreasing (Andersson, 2020; Ohlsson-Wijk and Andersson, 2022). Simultaneously, the flow of migrants to the Global North has grown, parallel to transformations in the labour market (Gauffin, 2020; European Commission, 2021; Gauffin, Heggebø and Elstad, 2021; OECD, 2022). Increasingly, individuals find themselves in precarious work arrangements, with little job security and few traditional benefits. This phenomenon is especially pronounced among migrant populations overrepresented in precarious employment situations (Kalleberg, 2000, 2009; Woolfson, Fudge and Thörnqvist, 2014; Rubery, 2015; Gauffin, 2020; Gauffin, Heggebø and Elstad, 2021; Orfao, del Rey and Malo, 2021). Despite these developments, the effect of employment uncertainty, specifically on migrant fertility intentions, has been little studied (Milewski and Mussino, 2018).

Studying fertility intentions can give information about the process of fertility decision-making that better reflects the underlying norms and the structural constraints leading people to postpone or abandon their childbearing plans than studying fertility behaviour (Thomson, 2015; Milewski and Mussino, 2018; Morgan and Rybińska, 2019). Although studying fertility intentions is especially interesting concerning migrants, who can have different values and labour market challenges compared to the natives, the topic remains largely unexplored in the academic literature (Milewski and Mussino, 2018). Additionally, very few studies on migrant fertility intentions have included men (Ortensi, 2015).

In most previous literature, employment uncertainty has been found to have a negative impact on fertility behaviour and preferences (Kreyenfeld, Andersson and Pailhé, 2012; Fiori *et al.*, 2013; Alderotti *et al.*, 2021; Alderotti, Mussino and Comolli, 2022). In times of economic uncertainty, which precarious employment often is linked to, people postpone having children or

abandon childbearing plans (Becker, 1960; Easterlin, 1975; Adsera, 2011; Lundström and Andersson, 2012; Schmitt, 2012; Fiori *et al.*, 2013; Fiori, Graham and Rinesi, 2018; Glavin, Young and Schieman, 2020; Vignoli, Tocchioni and Mattei, 2020; Alderotti *et al.*, 2022; Alderotti, Mussino and Comolli, 2022). On the other hand, precarious employment has been argued to hamper the ability to plan the future and make long-term commitments (Vignoli *et al.*, 2020). The subjective perception of employment uncertainty impacts fertility intentions negatively instead of the actual employment situation (Fahlén, 2013; Neyer *et al.*, 2022). However, it is expected that for migrants, the mechanism could be different. Therefore, this study aims to analyse how precarious employment differently affects the fertility intentions of migrants and natives in Sweden.

In the migrant social context where precarious employment is widespread, the precarious employment situation could be more normalised than among the Swedish-born, thus having a weaker effect on fertility intentions (see similar hypothesis in relation to the low-educated in Glavin, Young and Schieman, 2020). On the other hand, migrants coming from different normative and institutional contexts than Swedish-born could be more likely to react to uncertainty by opting for the 'alternative career' of becoming parents as a source of stability (Friedman, Hechter and Kanazawa, 1994; Schmitt, 2012; Wood and Neels, 2017). Precarious employment could, therefore, positively affect migrant fertility intentions. Nevertheless, following previous research findings on fertility behaviour (Andersson and Scott, 2005, 2007), the counter-hypothesis is that institutional context is decisive in shaping fertility decisions: migrants and the Swedish-born could respond to precarious employment similarly. Lastly, it is expected that the effect of a precarious employment situation on fertility intentions varies depending on whether a migrant is recently arrived or has spent a longer time in Sweden (Kulu and Milewski, 2007; Kulu and González-Ferrer, 2014; Carlsson, 2018; Milewski and Mussino, 2018; Andersson, 2021).

Thus, the primary research question is:

What impact does a precarious employment situation have on short-term fertility intentions in Sweden among migrants compared to the Swedish-born population?

There are also two additional research questions, which are:

Are there gender differences between men and women? Do the gender patterns differ between migrants and the Swedish-born?

Does the effect of a precarious employment situation differ between recently arrived and more longstanding migrants?

Studying the impact of precarious work and employment uncertainty on fertility intentions comparing migrants and the Swedish-born is critical for understanding the unique challenges faced by migrants and developing appropriate policy responses. Sweden is an exciting context for many reasons. The number of migrants has increased rapidly in Sweden, parallel to the changes in the labour market policy towards greater flexibility (Woolfson, Fudge and Thörnqvist, 2014; Gauffin, 2020). As of 2023, 20% of the population of Sweden is foreign-born (Statistics Sweden, 2023b). Although Sweden is known for its extensive welfare state, job security in Sweden has been declining recently, opening up new arenas for migrant precariousness (Woolfson, Fudge and Thörnqvist, 2014; OECD, 2018). Additionally, Sweden has a specific normative and institutional context where family policy encourages female labour market participation and gender equality (Oláh and Bernhardt, 2008; Andersson, 2020). There is also a prevailing norm of stable employment being a prerequisite for childbearing (Lundström and Andersson, 2012).

2. Theory and Previous Research

First, an overview of some main theories and frameworks related to employment and economic uncertainty, fertility behaviour and preferences will be given. Although there is a vast body of theories regarding fertility behaviour and preferences, only the theories deemed most relevant to the topic of this study are considered. Thus, the focus is on theories considering the

effect of economic resources and employment on fertility behaviour and preferences. Also, the most prominent theories related to migrant fertility behaviour and preferences are presented. After that, an introduction to the two most essential concepts for this study, fertility intentions and precarious employment, follows.

Lastly, a review of theory, studies and findings related to the effect of precarious employment on fertility behaviour and fertility intentions for migrants and the native-born is given. The review starts with an overview of the most important findings of the literature studying fertility behaviour since this literature is more comprehensive than the one on fertility intentions. Then, the focus is put on studies looking at the effect of precarious employment on fertility intentions, specifically. In the end, the few existing studies regarding the effect of employment precariousness on migrant fertility intentions and other studies on migrant fertility intentions are discussed in more detail.

2.1. Economic Resources, Employment Uncertainty and Female Labour Market Participation and Theories on Fertility Behaviour and Preferences

Economic theories have been used to understand fertility both on the macro and on the household or individual level. Gary Becker's *New Home Economics* theory on fertility has been influential in previous research. In his theory, the number of children is seen to be determined by a quantity-quality trade-off: investing in the quality (education, generally) of children costs more, which leads to people decreasing the number of children (Becker, 1960). That would lead one to think that having fewer resources to invest would also place a constraint on the number of children. Easterlin (1975) developed the idea further, adding that the economic context can affect fertility. In times of economic prosperity, people are more likely to have children as the cost of living is lower, and they can expect to be able to provide for a larger family. In times of economic uncertainty, people tend to postpone or restrain from childbearing as the costs of having children increase and the expected utility of having children decreases (Easterlin, 1975). Economic uncertainty is, thus, expected to affect fertility negatively. Nevertheless, these

economic theories do not discuss the effect of labour market fragilities or employment insecurity as such. The specific context of being a migrant is not considered, either.

Other theories emphasise career and employment uncertainty in explaining fertility behaviour and preferences. On the one hand, it has been argued that the difficulty of finding stable employment could lead to people choosing the '*alternative career*' of becoming parents as a source of stability and uncertainty reduction (Friedman, Hechter and Kanazawa, 1994). The uncertainty-reduction approach suggests that employment uncertainty could thus lead to increased fertility or more positive intentions, unlike what the economic approach suggests. That has been found to be the case for the low-educated (Kreyenfeld, 2010) but also for other disadvantaged groups in the labour market, such as migrants (Wood and Neels, 2017). Especially migrant women have significantly lower employment levels than native-born women in Europe (Kreyenfeld *et al.*, 2021).

However, the effect of economic or employment uncertainty on fertility likely also depends on norms, which is especially important to remember when comparing men to women and migrants to the native-born population (Milewski and Mussino, 2018). *The Second Demographic Transition* (SDT) theory suggests that the decreased fertility in advanced economies results from changes in social norms, values, and behaviour (Lesthaeghe, 2020). However, the norms and attitudes of migrants could differ from those in the country of destination, producing different effects. Especially gender norms and norms of female labour market participation are interesting in relation to the study at hand. These norms can also affect the gendered patterns in the effects of employment uncertainty on fertility behaviour and preferences. The SDT theory argues that increased female labour market participation leads to decreased fertility, as women in modern, individualised societies prioritise careers and self-fulfilment (Lesthaeghe, 2020). Nevertheless, migrants are not considered in the SDT.

The idea of female employment being detrimental to fertility is present in economic theory, too – as women enter the labour force, the opportunity costs of having children increase as they have to forgo earnings and career advancement opportunities (Becker, 1992). Nevertheless, fertility has remained relatively high in the Swedish context despite women being firmly integrated into the workforce (Oláh and Bernhardt, 2008; Andersson, 2020). Instead,

female employment has been positively related to fertility for both migrants and the Swedish-born (Andersson and Scott, 2005). That suggests that the institutional and policy context could be more critical for the effect of different employment situations on fertility behaviour and preferences than norms alone (Adsera, 2011; Kreyenfeld, Andersson and Pailhé, 2012; Lundström and Andersson, 2012; Andersson, 2020, 2021).

Sociologists Standing (2011) and Sennett (2006) argue that neoliberalism and globalisation have resulted in the precarisation of the labour market and increased demand for flexibility – for both companies and employees. This shift from predictable, stable and secure employment that dominated in the past towards short-term, quick and insecure working life makes it more difficult for the precarious employee to plan the future and create stable life narratives (Sennett, 2006; Standing, 2011). This general idea that uncertainty, which is an inherent characteristic of modern working life, hampers the ability to plan ahead and thus affects decision-making is present in modern economic theory (Beckert, 2016; Beckert *et al.*, 2018) and has recently also gained popularity in fertility intention research (Vignoli *et al.*, 2020). In the *Narrative Framework*, Vignoli et al. (2020) propose that personal narratives of the future embedded in shared contextual narratives impact childbearing decisions: "Structural constraints, expectations and imaginaries find their proper place in narratives of the future, the less abstract level of the imaginative capacity, able to sort them in an intelligible and actionable manner. The elements above are included in the narrative of the future, and, at this level, they influence fertility intentions" (p.32). Economic or employment uncertainty experienced at the specific moment is not the only thing affecting the plan of childbearing – one's narrative of the future also has an impact. This narrative impacts the effect precarious employment has on one's fertility plans.

2.2. Theories on Migrant Fertility Preferences and Behaviours: Socialisation, Adaptation, Disruption and Interrelation of Life Events

Differences in norms and values are also prominent explanations for differences in migrant fertility behaviour and intentions compared to natives. The first theory is that of *socialisation* – that since migrants have been socialised in the culture of their origin country, they bring values and childbearing ideals with them to the destination context (Kulu and Milewski, 2007; Kulu and González-Ferrer, 2014; Carlsson, 2018; Milewski and Mussino, 2018; Kulu *et al.*, 2019; Andersson, 2021, p. 269; Mussino, Wilson and Andersson, 2021). Secondly, it has been theorised that migrants *adapt* to the culture of the destination country – the longer the migrant stays in the country, the more similar their fertility ideals and behaviour become to the native-born population (Kulu and Milewski, 2007; Kulu and González-Ferrer, 2014; Milewski and Mussino, 2018; Kulu *et al.*, 2019; Andersson, 2021, pp. 268–269). The *interrelation of life events* refers to the fact that migrants often have higher fertility right after migration. That is partly due to the composition of the migrant population– if the reason for migration is marriage or reunification with a partner, having a child soon after the migration is more likely (Andersson, 2004). Selection has been hypothesised to affect the observed fertility patterns of migrants in other ways, too. The selection hypothesis is that since migrants are a selected group by observed (e.g. education) and unobserved (e.g. fertility preferences) characteristics, they can be more alike the population in the destination country in their fertility levels compared to the average population in their origin country (Kulu and Milewski, 2007; Kulu and González-Ferrer, 2014; Carlsson, 2018; Milewski and Mussino, 2018; Kulu *et al.*, 2019; Andersson, 2021, pp. 268–269). Lastly, contrasting the hypothesis of the interrelation of life events, the *disruption* hypothesis suggests that migrants would temporarily have lower fertility before and after arrival due to the high uncertainty, stress and economic costs related to the process of migration and resettling (Kulu and Milewski, 2007; Kulu and González-Ferrer, 2014; Andersson, 2021, p. 269).

2.3. Fertility Intentions

Most previous studies look at fertility behaviour, but this study analyses *fertility intentions* since the interest is on the effect of precarious employment on the plan to have (another) child and not on the behaviour or realisation of those plans. Studying fertility intentions gives more information about the decision-making process related to childbearing, whereas actual fertility behaviour is not always the result of a conscious decision (Thomson, 2015; Milewski and Mussino, 2018; Morgan and Rybińska, 2019). Given this difference, fertility intentions can better reflect the effect of norms and values on the decision to have children and the structural constraints leading people to postpone or abandon their childbearing plans (Milewski and Mussino, 2018; Morgan and Rybińska, 2019). As fertility intentions reflect norms to an extent, comparing the fertility intentions of migrants and natives can also give information about cultural integration (Milewski and Mussino, 2018; Mussino *et al.*, 2021; Mussino, Wilson and Andersson, 2021).

Although fertility intentions are worth studying for the above reasons, they have also been found to be good predictors of actual fertility behaviour (Schoen *et al.*, 1999). The literature focusing on fertility intentions is still much more scarce than the one focusing on behaviour. Therefore, both will be discussed, as some of the findings related to behaviour can also be relevant for studying intentions.

2.4. Precarious Employment

Precarious employment (PE) is a multidimensional concept. Due to its multidimensionality, the benefit of the concept is that it can capture heterogeneous types of uncertainty and insecurity in employment. The problem is, however, that there is no unanimity on the definition of PE (Kreshpaj *et al.*, 2020). Despite the heterogeneity in definitions, precarious employment is usually defined in relation to standard, stable employment. At the minimum, definitions most often include contractual employment insecurity, lack of rights and employment protection, and a measure of economic disadvantage (Kalleberg, 2009; Gauffin, 2020; Kreshpaj *et al.*, 2020). In practice, many employment situations can be precarious: self-employment and gig work can be PE and part-time and hourly work if involuntary. Unemployed

people can also be seen to be in a precarious employment situation, lacking the security offered by employment.

In the research focusing on the impact of precarious employment on fertility behaviour and preferences, the precarious or uncertain employment situation has been most often operationalised using objective indicators such as employment status and contract type (Lundström and Andersson, 2012; Modena and Sabatini, 2012; Pailhé and Solaz, 2012; Fiori *et al.*, 2013; Vignoli, Mencarini and Alderotti, 2020). Some have also included a longitudinal aspect, looking at persistence or spells of unemployment, for example (Busetta, Mendola and Vignoli, 2019; Schmitt, 2021; van Wijk, de Valk and Liefbroer, 2022). However, following the emergence of the narrative framework, more studies, primarily focusing on intentions, have started to use subjective perceptions of employment security as an indicator of precarious employment (Glavin, Young and Schieman, 2020; Vignoli *et al.*, 2020; Gatta *et al.*, 2022; Neyer *et al.*, 2022). In this study, the effect of a precarious employment situation on fertility intentions is analysed, looking at both employment status, focusing especially on unemployment, and subjective perception of employment uncertainty among the employed individuals. The benefit of looking at both, the unemployed and the ones who perceive their job to be uncertain, two different marginalised groups in an uncertain situation at the labour market can be included in the study.

2.5. Precarious Employment, Employment Status and Fertility Behaviour

There is a vast amount of literature on the effect of precarious employment and employment uncertainty on fertility behaviour, but the conclusions have been inconsistent (Kreyenfeld, Andersson and Pailhé, 2012; Alderotti *et al.*, 2021). Some common patterns can be summarised, however. Many studies from different contexts, both in Europe and North America and Australia, find that employment uncertainty is associated with postponement of childbearing (Adsera, 2011; Lundström and Andersson, 2012; Schmitt, 2012, 2021; Steele *et al.*, 2014; Glavin, Young and Schieman, 2020; Vignoli, Tocchioni and Mattei, 2020). While some studies argue that perceived uncertainty produces the postponement effect (Comolli, 2017), others state

that low income explains it (van Wijk, de Valk and Liefbroer, 2021). The effects of increased labour market volatility during the Great Recession have also been studied extensively, the general conclusion being that the increased economic and labour market uncertainty brought by the recession had a negative impact on fertility in Sweden (Comolli *et al.*, 2021; Alderotti, Mussino and Comolli, 2022) and an even more substantial impact elsewhere (Comolli, 2017; Ayllón, 2019; Matysiak, Sobotka and Vignoli, 2021).

A meta-analysis by Alderotti et al. (2021) synthesised studies about employment instability and fertility from the 1970s onwards, concluding that the relationship between fertility and time-limited employment or unemployment was gender specific: unemployment was more detrimental to the fertility of men, while the effects of time-limited employment affected women's fertility more negatively. The difference is likely the result of gendered division of labour. They also found that the welfare state context was a significant moderator, which has been found in previous studies, too (see Kreyenfeld, Andersson and Pailhé, 2012). Interestingly, the negative effect of time-limited employment was most potent in Nordic and Southern European countries. The effect of unemployment on fertility was insignificant in the Nordic context.

Additionally, it was found that the negative relationship between employment instability and fertility has become stronger over time, following the labour market transformation and recessions that have resulted in increased employment instability. Lastly, concerning parity, it was found that stable employment is essential not only for starting a family but also for enlarging it (Alderotti *et al.*, 2021). They argue that these findings are likely a result of the strong welfare state support, policy supporting female labour market participation and the strong norm of female employment.

Whereas it has become more common to control for migrant status in analyses of employment and fertility, few studies look at migrants specifically. In the European context, Ayllón (2019) found that immigrants of non-EU origin and individuals with low income were most affected by job insecurity in the aftermath of the Great Recession (Ayllón, 2019). Alderotti et al. (2022) also concluded that in Italy and Sweden, the fertility of recently arrived migrants was substantially affected, as was the fertility of people who were unemployed or with unstable

careers. However, the vulnerabilities of being a migrant and experiencing employment instability did not accumulate – in fact, the fertility of native-born women was more affected by labour market uncertainties, supporting the hypothesis of this study that migrant fertility could be less affected. The effect of the recession was also found to be stronger in Italy compared to Sweden (Alderotti, Mussino and Comolli, 2022). Earlier research on Sweden has found migrant fertility behaviour to respond to employment uncertainties similarly to the Swedes (Andersson and Scott, 2005, 2007; Lundström and Andersson, 2012).

2.6. Precarious Employment, Employment Status and Fertility Intentions

Much of the previous research on economic and employment uncertainty and fertility intentions have come to similar conclusions as the studies on fertility behaviour. On the individual level, many studies have used employment status as the primary independent variable, finding that insecure employment conditions play a role in childbearing decision-making both for starting a family and for having another child (Fiori *et al.*, 2013; Fahlén and Oláh, 2018). Welfare-state, policy and EPL context are essential moderators for the association, and the effects often differ by gender and education level (Fahlén, 2013; Fahlén and Oláh, 2018; Karabchuck, 2020; Novelli *et al.*, 2021). Age is also found to be an essential factor: precarious employment and uncertainty affect young women's intentions more – the intentions of women closer to the end of their reproductive lifespan are less affected by such constraints (Modena and Sabatini, 2012; Fiori *et al.*, 2013; Fahlén and Oláh, 2018). Fertility intentions have also been found to be negatively affected by macroeconomic circumstances such as the Great Recession (Fiori, Graham and Rinesi, 2018; Novelli *et al.*, 2021).

Different from fertility behaviour research, many studies on fertility intentions have also included subjective perceptions of income and employment uncertainty, following the idea that one's expectations for the future affect fertility decision-making (Fahlén, 2013; Fahlén and Oláh, 2018; Busetta, Mendola and Vignoli, 2019; Vignoli *et al.*, 2020; Gatta *et al.*, 2022; Neyer *et al.*, 2022). Fahlén (2013) found that perceived economic and job uncertainty has a negative effect on fertility intentions, though the effect was more substantial in contexts with a lack of institutional

support. Vignoli et al. (2020), studying 22 European countries, found that a job with uncertain conditions only affected fertility intentions negatively when subjective well-being, which they used as a proxy for unmeasured amenities of the job, also was low. Gatta et al. (2022) argue that perceived resilience to job loss is more critical for fertility intentions than perceived job uncertainty in Italy. However, even perceived job loss was found to have an impact. Also, in Sweden, a recent working paper found support for a "subjective turn" in childbearing considerations – respondents fearing job loss and perceiving reemployment to be difficult to achieve have a lower propensity to state a positive intention (Neyer *et al.*, 2022). Despite the different findings, these studies conclude that it is vital to include subjective perceptions of future employment prospects in the study of fertility and fertility intentions.

The studies focusing on migrant fertility intentions are few (Milewski and Mussino, 2018), and studies on the effect of precarious employment on migrant fertility intentions are even fewer. Modena and Sabatini (2012) controlled for citizenship in their study about precarious employment and childbearing intentions in Italy, finding that foreign citizens were likelier to state a positive intention than Italians. However, they did not examine whether the effect of precarious employment differed for natives and migrants (Modena and Sabatini, 2012). Mussino et al. (2021) found, however, that the patterns of fertility intentions did indeed differ between migrant and native-born Italian women. Labour market status only affected the propensity to state a positive intention among the Italian-born. The migrants who did not want a child were most often housewives, whereas, among native Italians, students and jobseekers were most likely to state a negative intention (Mussino *et al.*, 2021). The study did not look at men – generally, most studies focusing on migrant fertility have only looked at women. Looking at the effect of employment conditions on fertility intentions comparing migrants and natives in Europe, Alderotti et al. (2022) found that stable, unlimited-time employment became more critical for childbearing intentions after the recession for both immigrants and the native-born. Interestingly, this link that previously had been stronger among the native-born became stronger for immigrants after the recession.

The effects also differed by gender: while the positive effect of stable employment on planning to have a child was stronger for men than for women, it was most substantial for

immigrant men. Also, being employed was especially important for the intentions of immigrants that had arrived young, presumably being more integrated into the host society and its labour market (Alderotti *et al.*, 2022). These results highlight the importance of studying the effect of employment uncertainty on fertility intentions by comparing natives and migrants, including both men and women.

Similar analyses on the effect of employment uncertainty on immigrant fertility intentions have yet to be conducted in Sweden. However, Carlsson (2018) controlled for labour market status in his study about the patterns of adaptation of migrant fertility intentions, finding that being employed part-time or unemployed did not affect the propensity to state a positive intention (Carlsson, 2018). Regarding realisation patterns in Sweden and Norway, Carlsson (2022) found differences between natives and certain immigrant groups – women from non-Western G2 countries were less likely to realise a positive fertility intention. On the other hand, the propensity to realise a positive intention was elevated for Western G1-origin men, especially with higher education and full-time employment. These differences could reflect the different societal advantages and disadvantages of migrants from different origins (Carlsson, 2022).

All in all, there is a clear need for studies looking at the effect of precarious employment on migrant fertility intentions comparing them to the native-born and for studies that look at both male and female migrants' childbearing intentions. Additionally, there is a demand for studies on migrant fertility intentions that do not only look at employment status but also include subjective perceptions in the analysis.

3. Background – The Swedish Context

3.1. Migration Patterns in Sweden

Sweden has a long history of receiving migrants: since World War II, Sweden has been a country of net migration. In the 1960s and the 1970s, immigration was mainly labour migration from the neighbouring Nordic countries. After the 1980s, immigration changed character, being more driven by refugees and their family reunification (Nilsson, 2004). In the 2000s, immigration accelerated, reaching an all-time high in 2016 and remaining historically high

(Carlsson, 2022). The migration after the 2000s has been driven by asylum seekers, family reunification, and labour and education migration (Statistics Sweden, 2023a). The number of international migrants has increased rapidly: the foreign-born now comprise 20,4% of the Swedish population (Statistics Sweden, 2023b), which is the second highest share in the EU (OECD, 2022). Immigration was declining already before COVID-19, likely due to stricter migration policy, but the pandemic and the restrictions on international migration that followed likely further contributed to the decrease. Immigration somewhat recovered in 2021 as restrictions were lifted (Statistics Sweden, 2022c). Migration to Sweden is expected to increase, although significant year-to-year variation is likely (Statistics Sweden, 2021a).

The composition of the migrant population has also changed over the years. The refugee crisis and the flow of Syrian migrants had a significant effect on the Swedish population development and the composition of the migrant population. In the years following the refugee crisis, Syrians were the largest immigrant group migrating to Sweden (Tønnessen, Aradhya and Mussino, 2021). The Finnish people have been the largest foreign-born group since the 60s labour migration, but in recent years Syrians and Iraqis have outnumbered the Finns (Statistics Sweden, 2023b, 2023a).

3.2. Precarious Employment in Sweden

Despite Sweden being well known for its extensive welfare state, employment security has declined over the past decades. The increase in precarious, meaning non-standard, uncertain, and unpredictable, employment is a result of global trends, policy and demographic change (Sennett, 2006; Standing, 2011; Rubery, 2015; Gauffin, 2020; Gauffin, Heggebø and Elstad, 2021; Bodin *et al.*, 2022). Sweden now has the highest job insecurity in the Nordic countries (OECD, 2018).

Parallel to the influx of migrants to Sweden and the Global North discussed above, new types of precarious jobs have emerged globally, such as gig work for digital platforms, that differ from standard definitions of employment relations (Kenney and Zysman, 2016; Healy, Nicholson and Pekarek, 2017). Part-time employment, which can be a form of precarious employment when involuntary, has also been increasing following policy changes towards

greater flexibility (Gauffin, 2020). Simultaneously, the employment protection legislation gap between strictly regulated permanent employment and loose regulation of temporary employment has widened (Berglund *et al.*, 2021), while the bargaining power of trade unions has deteriorated parallel to a decline in union density and changes in labour migration policies (Woolfson, Fudge and Thörnqvist, 2014).

Immigrants are more likely to be in precarious employment situations than Swedish-born (Gauffin, Heggebø and Elstad, 2021; Bodin *et al.*, 2022). Additionally, migrants are overrepresented among the economically disadvantaged (Statistics Sweden, 2021b), which indicates their vulnerable position in the labour market. In combination, the ongoing labour market and demographic developments open new avenues of migrant precariousness. Potentially, an unregulated secondary labour market of precarious migrant employment could emerge in Sweden (Woolfson, Fudge and Thörnqvist, 2014; Berglund *et al.*, 2021).

In response to the COVID-19 pandemic, Sweden took a step back from liberalisation and flexibilisation, instead reinforcing and extending the existing social insurance system. Nevertheless, the pandemic also exposed social inequalities: unemployment rose predominantly among temporarily employed and in sectors with low-skilled, young, and migrant workers (Campa, Roine and Strömberg, 2021; Ellison, Blomqvist and Fleckenstein, 2022).

3.3. Fertility Patterns in Sweden

Historically, period fertility in Sweden has been pro-cyclical, fluctuating following economic developments. The pro-cyclical fertility pattern suggests that at times of economic and employment insecurity, childbearing is postponed (Andersson, 2000; Comolli, 2017; Comolli *et al.*, 2021), which has been evident in Sweden in the past: despite the roller-coaster period fertility pattern, cohort fertility has remained stable (Andersson, 2000, 2020; Oláh and Bernhardt, 2008; Comolli *et al.*, 2021). Worsening financial standing and labour market position among women was found to negatively affect period fertility, especially first-birth risks, following the economic crisis of the 1990s. Conversely, during an economic upturn, a positive relationship between female income and fertility was found (Andersson, 2000).

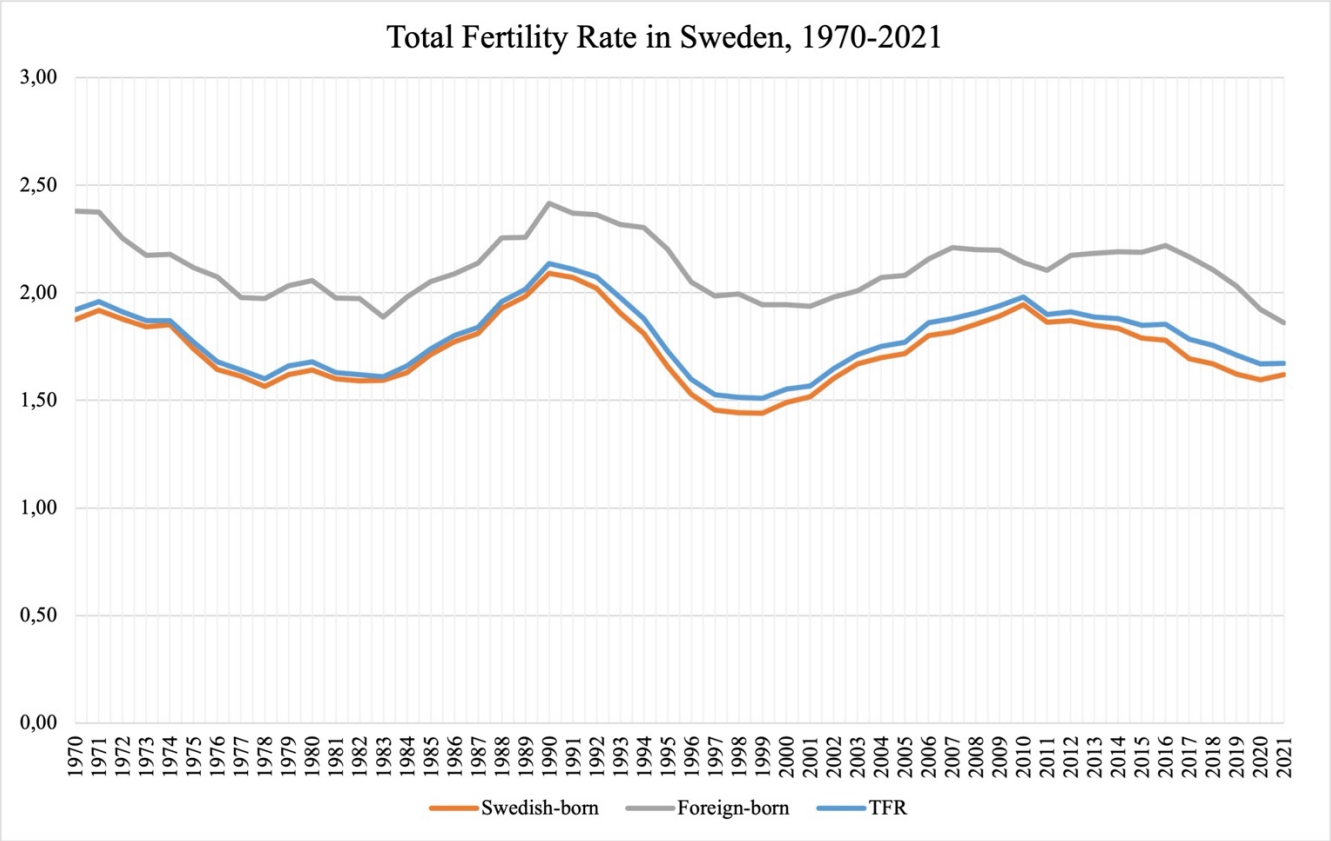
Compared to many other European countries that have seen dramatic declines in fertility, fertility in Sweden has remained relatively high. In the 1990s and the 2000s, Sweden's period fertility rate was below replacement level but still “highest-low” in an international comparison, averaging around 1.8 (Andersson, 2020). The “highest-low” fertility has been generally linked to the Swedish welfare state and family policy, encouraging female employment and gender equality (Oláh and Bernhardt, 2008; Andersson, 2020). In the Swedish policy context, where parental benefits are tied to previous earnings, stable employment is a prerequisite for childbearing: women and men well-established in the labour market are likelier to become parents than the ones with weaker attachment. The positive association is stronger for women than men (Andersson, 2000; Lundström and Andersson, 2012).

During the 2010s, Sweden has been experiencing a steady decline in fertility that neither followed the economic cycle nor resulted from policy changes (Ohlsson-Wijk and Andersson, 2022). This latest downturn seems to have been triggered by the Great Recession of 2008, but surprisingly, after the economy recovered, the fertility rate did not. Although the 2008 recession was milder and shorter than the 1990s economic crisis, the effects on childbearing seem more persistent and severe (Comolli *et al.*, 2021), evoking whether this decline is a direct effect of macroeconomic developments. However, labour market status and earnings are still essential pieces of the puzzle: the decline in fertility has been steepest among men and women with weaker labour market attachment and lower earnings (Ohlsson-Wijk and Andersson, 2022). Recently, also in Sweden, researchers have increasingly turned to subjective perceptions of uncertainty rather than objective economic circumstances in explaining the current development (Neyer *et al.*, 2022).

In 2019 a different type of crisis, the COVID-19 pandemic, hit the world. In several countries, fertility rates declined following the onset of the pandemic, but not in Scandinavia. Instead, in Sweden, after a decade of decline, in 2021, the total fertility rate among Swedish-born women increased slightly, from 1.60 to 1.62 (Bujard and Andersson, 2022; Statistics Sweden, 2022b).

Figure 1: Total Fertility Rate in Sweden, 1970-2021

Data from Statistics Sweden (SCB, 2022)



3.4. Migrant Fertility Patterns in Sweden

Migrant fertility has largely followed the general childbearing patterns in Sweden, albeit with higher fertility levels among the foreign-born (Andersson, 2004; Statistics Sweden, 2022b). Migrant fertility increased during the 2000s, stabilised in the 2010s and has been declining since 2016 (Statistics Sweden, 2022b). Country of origin, reason for migration and length of stay are essential factors affecting migrant fertility behaviour. Migration and childbearing have been found to be interrelated life events – fertility is often elevated right after the migration (Andersson, 2004; Kulu and Milewski, 2007; Alderotti, Mussino and Comolli, 2022). The norms and ideals of the origin country context also generate differences in migrant fertility (Andersson and Scott, 2005; Lundström and Andersson, 2012; Mussino, Wilson and Andersson, 2021).

However, migrants have been found to adapt their fertility behaviour to the cultural and institutional context of the destination country over time: migrants that have spent more time in Sweden tend to be more similar to the Swedish-born in their childbearing behaviour (Lundström and Andersson, 2012; Alderotti, Mussino and Comolli, 2022).

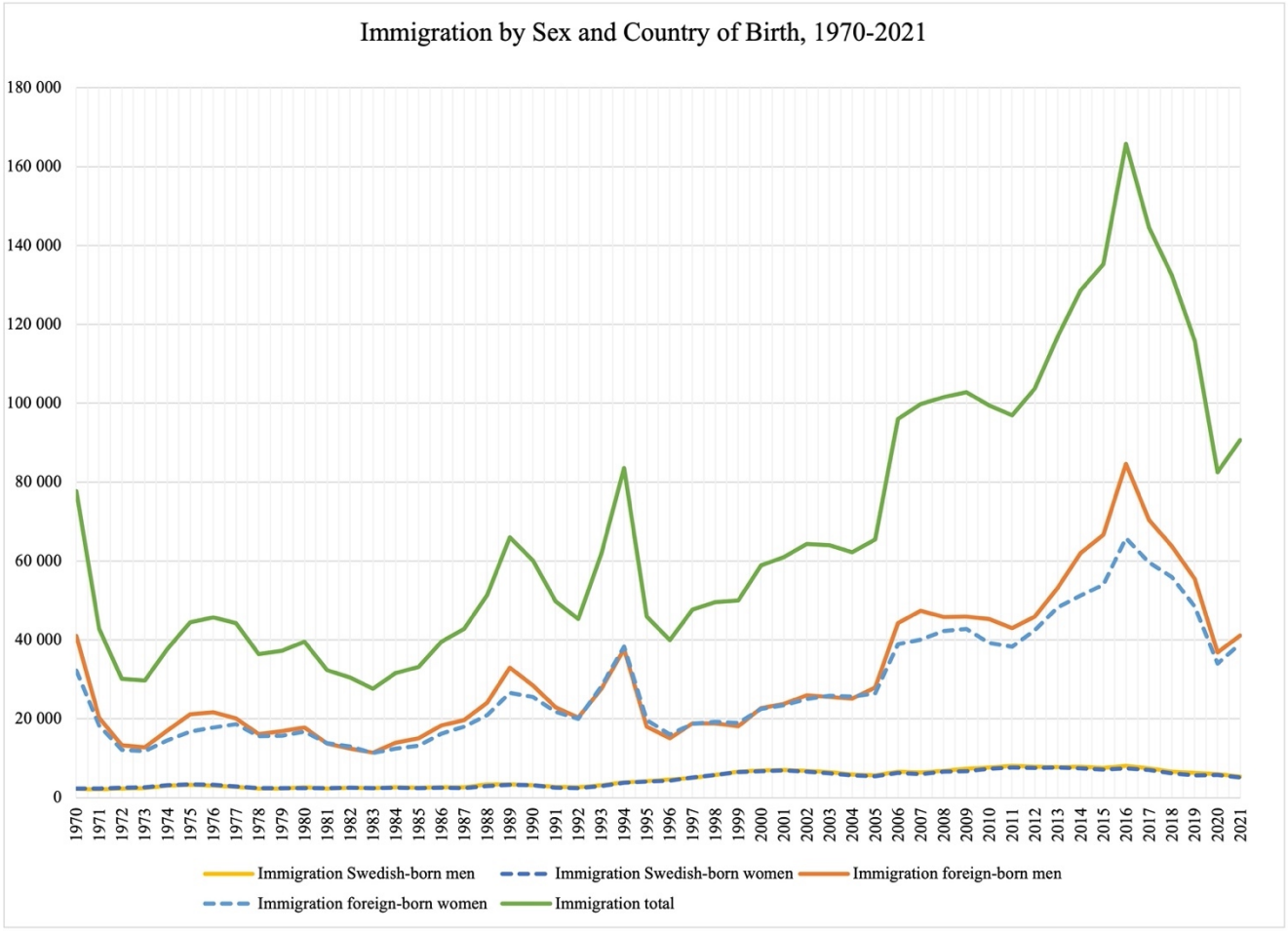
As for the Swedish-born, participation in the labour force has been found to be positively associated with becoming a parent among migrants (Andersson and Scott, 2005). The effect has also been found for higher-order migrant births (Andersson and Scott, 2005). However, in the face of unemployment or employment instability, natives have been found to postpone births considerably more than migrants (Alderotti, Mussino and Comolli, 2022).

Despite migrant fertility being higher than native fertility in Sweden, it is declining, too. The decline in first-birth fertility after the Great Recession is visible among migrants as well, except for a few groups coming from high-fertility regions. The negative effect of the onset of the financial crisis on the propensity of starting a family was especially pronounced for the recently arrived migrants. No negative effect of the crisis was detected for higher-order births – instead, the probability of having another child increased (Alderotti, Mussino and Comolli, 2022).

Whereas migrant fertility in Sweden has been declining at approximately the same pace as the fertility of the Swedish-born during the past decades (Alderotti, Mussino and Comolli, 2022), during the pandemic migrant fertility declined while the fertility of the Swedish-born increased slightly (Statistics Sweden, 2022a). Changes in migration flows could partly explain the difference: since fertility and migration are interdependent events, fewer arriving migrants can result in a lower period fertility rate (Statistics Sweden, 2022a; Tønnessen and Wilson, 2023).

Figure 2: Immigration by Sex and Country of Birth, 1970-2021

Data from Statistics Sweden (SCB, 2022)



4. Hypotheses

As mentioned, a precarious employment situation has been found to affect both fertility intentions and behaviour and to delay childbearing (Kreyenfeld, Andersson and Pailhé, 2012; Modena and Sabatini, 2012; Vignoli, Tocchioni and Mattei, 2020; Alderotti *et al.*, 2021; Mussino *et al.*, 2021; Alderotti, Mussino and Comolli, 2022; van Wijk, de Valk and Liefbroer, 2022), since uncertainty about the future hampers the ability to make long-term commitments (Vignoli *et al.*, 2020). Also, in Sweden, stable employment has been found to be a prerequisite for having children (Andersson, 2000; Andersson and Scott, 2005; Lundström and Andersson, 2012). Based on these findings and both the economic and the narrative framework, the primary hypothesis is that

H1: Overall, being in a precarious employment situation has a negative effect on fertility intentions in Sweden.

Since one's narrative of the future partly arises from the sociocultural context (Vignoli *et al.*, 2020), it is likely that the social context of being a migrant in the Swedish labour market likely affects the effect of PE on fertility intentions. Given that migrants are disadvantaged in the labour market, the expectation of finding stable employment might not be included in their narrative of the future as often as for Swedes. The precarious labour market situation, widespread in the migrant social context, could have become normalised. Whereas Swedes postpone childbearing in wait for stable employment, migrants might not do the same since their imagined future employment prospects look different. Glavin et al. (2020) found support for this hypothesis in Canada concerning different unemployment contexts and educational attainments: precarious employment only affected fertility among the college-educated women in regions with high employment prospects but not the low-educated women in areas with high unemployment. Arguably, the same could be true in the social context of migrants. Therefore, the second hypothesis is that

H2a: The negative effect of a precarious employment situation is weaker for migrants than for the Swedish-born.

On the contrary, more traditional gender norms among migrants compared to the Swedish-born could hypothetically lead to employment precarity having a more negligible effect on fertility intentions and behaviour than the native-born. Furthermore, given the more difficult situation of migrants in the Swedish labour market, migrants might be more likely to choose the 'alternative career' of becoming parents (Friedman, Hechter and Kanazawa, 1994; Wood and Neels, 2017). That could lead to migrants having higher fertility in uncertain employment situations, whereby it is hypothesised that

H2b: A precarious employment situation positively affects fertility intentions among migrants.

The counter-hypothesis, following the findings of Andersson and Scott (2005, 2007), is that, despite the decline in employment security, in the Swedish welfare state context, the employment situation affects migrants' and natives' plans of childbearing in the same way – employment and fertility (intentions) are positively associated. Thus, the counter-hypothesis is that

H2c: There are no differences between migrants and the Swedish-born regarding the effect of precarious employment on fertility intentions. Precarious employment has a negative effect on fertility intentions among both migrants and the Swedish-born.

Also, given the importance of norms, it is likely that the differences in the effects of precarious employment on fertility intentions between migrants and the Swedish-born differ by gender. Sweden is one of the countries with very high female labour market participation and policy promoting gender equality (Oláh and Bernhardt, 2008; Andersson, 2020); most migrants are likely to come from contexts with a more traditional gendered division of labour than Sweden. Additionally, previous research on the Swedish-born suggests that the positive association between employment on fertility has been especially pronounced for women (Andersson, 2000; Lundström and Andersson, 2012). Therefore, it is expected that

H3: The difference in the negative effect of a precarious employment situation on fertility intentions (H2a) between migrants and the Swedish-born is more prominent among women than men.

Recently arrived migrants will likely be less integrated into the labour market and Swedish society than more long-standing migrants. Following the logic of the hypotheses above, recently arrived migrants that are in a weaker labour market position are expected to be more likely to opt for the alternative career of childbearing to reduce uncertainty in the new country

(Wood and Neels, 2017). It is also expected that due to the interrelation of life events, some recently arrived migrants plan to have children regardless of possible employment uncertainty (Kulu and Milewski, 2007; Kulu and González-Ferrer, 2014; Andersson, 2021, p. 269). It is expected that

H4a: The negative effect of a precarious employment situation (H1, H2a) is more negligible on the fertility intentions of recently arrived migrants compared to the migrants that have spent a longer time in Sweden.

The counter hypothesis is that due to the accumulated uncertainties related to the process of migration and the precarious employment situation, the newly arrived migrants are more likely to not plan for childbearing when the employment situation is precarious compared to the more long-standing migrants who are in a more secure position (Andersson, 2004, 2021, pp. 268–269; Wood and Neels, 2017; Alderotti *et al.*, 2022). Therefore, it is expected that

H4b: The negative effect of a precarious employment situation (H1, H2a) is stronger for the newly arrived migrants compared to the migrants that have spent a longer time in Sweden.

5. Method

In this section, first, the data is presented. After that, the research question is re-introduced, followed by the model specification, description of variables and their operationalisation. Then, the analytical strategy, sample, and treatment of missing values are presented. Lastly, relevant ethical considerations are discussed.

5.1. Data

The data used in this study is from the second round of the Swedish Generations and Gender Survey (GGS), collected in 2021 through online questionnaires and from population registers. The total sample includes 8,082 respondents aged 18 to 59. The response rate was only

27%, which is a limitation of this data. The GGS is optimal for this study, as it is designed for the study of the causes and consequences of changes in family and fertility patterns (Stockholm University, 2022). The Swedish GGS-II questionnaire also includes a new sub-module to study uncertainties and resilience, including questions about perceived job security (Andersson, Dahlberg and Neyer, 2020). These questions allow for the analysis of perceived employment uncertainty on fertility intentions, making the data especially fitting for this study. The GGS data on migration background includes information about the respondent's country of origin and the age when they first came to live in the host country. Therefore, it is well-suited for analysis of the migrant population.

5.2. Model Specification

In all regression analyses, binary logistic regression models were used. Ordered logistic regression could have been an option, but a binary model was deemed more suitable given the limited sample size.

The logistic regression model estimates the probability of having positive fertility intentions based on the values of the predictor variables. The functional form of the model can be expressed as follows:

$$P(\text{Positive Intentions} = 1 \mid X) = 1 / (1 + \exp(-z))$$

Here, $P(\text{Positive Intentions} = 1 \mid X)$ represents the probability of having positive intentions given the predictor variables X. The logistic function, represented by $1 / (1 + \exp(-z))$, maps the linear combination of the predictors to a probability between 0 and 1.

The linear combination, denoted as z, is calculated as:

$$z = \beta 0 + \beta 1X1 + \beta 2X2 + ... + \beta n*Xn$$

In this equation, β0, β1, β2, ..., βn are the coefficients associated with each predictor variable X1, X2, ..., Xn.

The AIC/BIC and Likelihood Ratio Tests were used to assess model fit, see whether adding a variable contributes to bettering the model, and determine which variable operationalisation to use. The model deemed to have the best fit according to the AIC/BIC was chosen as the final model, except that household income was included for theoretical reasons despite the AIC/BIC preferring the models without it in most cases.[1]Also, as diagnostics, a link test was estimated for each model showing no specification errors in the models. Lastly, the ROC curves were plotted. The area underneath the ROC curve was over 0,8 for all models, indicating good accuracy.

The results are presented mostly descriptively as Average Marginal Effects and Predicted Probabilities. By employing the (Goldstein and Healy, 1995) method, Confidence Intervals are computed to maintain an average level of 5% for type I errors in pairwise comparisons of a group of means, thereby establishing a confidence level of 83.5%. The full model results in odds ratios from all models are presented in Appendix 11.1.

5.3. Dependent Variable: Short-Term Fertility Intentions

The dependent variable is derived from the question about short-term fertility intentions. The question was: *"Do you intend to have (additional) children during the next three years?"* There were four response alternatives: *Definitely not*, *Probably not*, *Probably yes*, and *Definitely yes*. The resulting variable was recoded into a binary variable, where the negative responses *Definitely not*/ *Probably not* were coded as 0 and the positive responses *Probably yes/Definitely yes* as 1. This operationalisation is seen to reflect the decision-making process better than the alternative of coding only certain positive responses as 1. Many previous studies have coded only certain positive responses as 1, arguing that certain positive intentions are a good predictor

[1] As a robustness check, models without the household income variable were also estimated, and the results can be found in Appendix 11.3.

of fertility (Schoen *et al.*, 1999). However, this study aims not to predict fertility behaviour but to understand how precarious employment impacts the decision-making process of having a child.

5.4. Main Independent Variables

5.4.1. Activity Status

As mentioned, following the more classical approach to studying employment precariousness and employment status in research on fertility behaviour and intentions, the first main independent variable is the categorical variable *Activity status*. In the survey, the respondents were asked *"Which of the items best describes your current employment status?"* and the response alternatives were *In education or training, employed, Self-employed, Unemployed, On maternity or paternity leave,* and *Other*s. Particularly the activity status *Unemployed* reflects an uncertain and marginalised situation in the labour market. In the survey, the people on parental leave were not asked about their activity status, making it impossible to know whether the respondent on parental leave is a student, in employment, unemployed or something else. Thus, it is impossible to analyse the effect of activity status on their fertility intentions. Additionally, including the parental leave category in the models could lead to problems of multicollinearity since the ones on parental leave are always at parity one or higher. Due to these reasons, the ones on parental leave were excluded from the analysis.[2]

Thus, the activity status variable includes *In education or training, employed, Self-employed, Unemployed, Other, and Missing.* The category *Other* is a residual category. *Missing* includes the missing values.

5.4.2. Likelihood of Job Loss

In order to study how the subjective perception of employment precariousness among the employed affects fertility intentions, the categorical variable *Likelihood of Job Loss* is used. In the survey, the respondents were asked, *"How likely is it that you will lose your job in the next*

[2] As a robustness check, models with the activity status *On maternity or paternity leave* included were also estimated. Results can be found in Appendix 11.3.

twelve months?" and the response alternatives were *Very unlikely, Unlikely, Unsure, Likely,* and *Very likely.* The question was only asked to the individuals that are either employed or self-employed. Since some response alternatives had few observations, the categories *Very unlikely* and *Unlikely* and the categories *Likely* and *Very likely* were combined. Thus, the final variable consists of the following categories: *Unlikely*, *Unsure*, *Likely* and *Missing*.

5.5. Migrant Background

The variable for *Migrant background* is derived from the variable *Born in Country* with categories *Yes* and *No* and recoded into a dummy with the value 1 for migrants (not born in Sweden) and value 0 for non-migrants (born in Sweden).

Also, a second variable concerning migrant background is generated to include the aspect of the duration of stay. The migrants that have arrived less than five years ago at the time of the interview are categorised as *Migrant, Recently arrived*, and migrants that have spent five years or more in Sweden are categorised as *Migrant who arrived 5+ years ago*. This variable is only used in the last analysis, looking at the impact of length of stay on the effect of activity status on fertility intentions.

5.6. Control Variables

Previous studies on the effect of employment uncertainty on fertility intentions have found parity to be an important factor (Fiori *et al.*, 2013; Fahlén and Oláh, 2018; Mussino *et al.*, 2021; Alderotti, Mussino and Comolli, 2022), whereby it is included as a control variable. *Parity* is operationalised as a categorical variable with categories *0, 1, 2* and *3 or more children*.
Also, age is an essential determinant of fertility intentions, as fertility preferences change throughout the life course and the reproductive lifespan (Modena and Sabatini, 2012; Fiori *et al.*, 2013; Fahlén and Oláh, 2018). Both *Age* and *Age squared* are added to the models as control variables since the effect of age on fertility intentions is expected to be curvilinear, and the quadratic term was statistically significant when added to the model.
Since in Sweden, childbirth often precedes marriage but happens to couples in cohabitation (Hoem and Hoem, 1988; Fahlén and Oláh, 2018), it is expected that cohabitation is a crucial

determinant also for fertility intentions. Thus, *Cohabitation status* is added to the models as a dummy variable, with the value 1 indicating that the respondent is cohabitating and the value 0 indicating that they are not.

Fertility intentions have also been found to differ by education level (Fahlén and Oláh, 2018; Mussino *et al.*, 2021; Carlsson, 2022), which is why education level is also controlled for in all the statistical analyses. *Education level* is operationalised as a categorical variable with the following categories *Primary/Lower-secondary education, Upper-secondary education, Post-secondary education, Tertiary education* and *Missing*.

Additionally, research on fertility behaviour, including income, has been found to mitigate the negative effect of precarious employment (Alderotti *et al.*, 2021; van Wijk, de Valk and Liefbroer, 2021). The same could be valid for the effect of employment uncertainty on fertility intentions. Thus, *Household income* is included in the models. In all models except the last one, the *Household income* variable has the following categories: *4,999 € or less, 5,000 to 9,999 €, 10,000 to 19,999 €, 20,000 to 39,999 €, 40,000 to 59,999 €, 60,000 to 79,999 €, 80,000 to 99,999 €, 100,000 € or more* and *Missing*. In the last model, including only migrant women, there were empty categories in the *Household income* variable, whereby the variable was recoded to have fewer categories. In the last model, the categories *4,999 € or less, 5,000 to 9,999 €,* and *10,000 to 19,999 €* are coded as *Low income,* the categories *20,000 to 39,999 €, 40,000 to 59,999 €* are coded as *Middle income* and the categories *60,000 to 79,999 €, 80,000 to 99,999 €* and *100,000 € or more* are coded as *High income*. The *Missing* category is the same.

Lastly, the migrant origin country is added as a control variable in analyses looking at only migrants. Both fertility preferences and behaviour tend to vary depending on the country of origin (Carlsson, 2022). Due to the small sample size, it was only possible to look at macro areas. The countries were grouped following the example of Carlsson (2018) into four categories: *Western countries, Eastern European countries, Middle Eastern/ North African countries,* and *Other non-European countries*.

5.7. Research Question

As already defined, the main research question is *"What impact does precarious employment have on short-term fertility intentions in Sweden among migrants compared to the Swedish-born population?"*. Thus, this study's primary focus is on the difference between migrants and Swedish-born regarding the effect of precarious employment on short-term fertility intentions. However, as the previously stated hypotheses indicate, the study also aims to find out what the effect of precarious employment on fertility intentions is generally in Sweden. Also, it is studied whether there are gender differences and additionally regarding migrants, the study aims to look at whether there are differences in the effect of precarious employment on fertility intentions between recently arrived migrants and migrants that have spent a longer time in Sweden. Thus, the additional research questions are *"Are there gender differences between men and women? Do the gender patterns differ between migrants and the Swedish-born?"* and *"Does the effect of a precarious employment situation differ between recently arrived and more longstanding migrants?"*.

5.8. Analytical Strategy

The analytical strategy consists of six different analyses. First, descriptive analysis is conducted to explore some emerging general patterns in the data. The descriptive results are weighted, as recommended in the technical report by Statistics Sweden (Statistics Sweden, 2021c). Weights are not used in the statistical analyses since the variables used for the construction of the weights are included in the models[3] (Statistics Sweden, 2021c). In this case, weighting the analyses could lead to over-adjustment and distort the estimates. Given that the design variables are included in the model as predictors, not using the weights should not make the results less correct (Statistics Sweden, 2012).

[3] As a robustness check, models were also estimated with the weights. Results can be found in Appendix 11.3.

Second, to test the first hypothesis on whether precarious employment has a negative effect on fertility intentions in Sweden (H1), two different sets of models for both men (M) and women (W) were estimated. First, models looking at the effect of activity status on fertility intentions are estimated (Model 1M and 1W). Then, in the second set of models, the effect of subjective perception of precariousness, the perceived likelihood of job loss, on fertility intentions are investigated (2M and 2W). In these initial models, migrant background is controlled for, but there are no interactions, so the effects are not allowed to vary between migrants and Swedish-born. That is because the hypothesis tested is related to the general trend in the effect of precarious employment on fertility intentions in Sweden.

To test the hypotheses 2a, 2b, 2c, 3 regarding the differences in the effect of precarious employment on fertility intentions between migrants and Swedish-born, the interaction between precarious employment and migrant background is presented. Models 3M and 3W present the effect of the objective indicator of precariousness, activity status, which is interacted with migrant background, on fertility intentions. While in Models 4M and 4W, the subjective indicator of a precarious employment situation, the likelihood of job loss, is interacted with migrant background, and its effect on fertility intentions is estimated. Again, models are stratified by gender so that gender differences can be grasped.

In the last part of the analysis, the hypotheses 4a and 4b concerning the difference in the effect of precarious employment on fertility intentions by the duration of stay for migrants is analysed. Due to data limitations discussed in more detail below, the model is only specified for female migrants (model 5). Also, only the effect of the objective indicator, activity status, is considered. Activity status is interacted with the variable indicating whether a migrant has arrived recently or not to allow the effect to vary between the two groups.

All the models are controlled for migrant background, age, age squared, parity, cohabitation, education level and household income. In Model 5, the origin region is also added as a covariate.

5.9. Sample and Missing Values

Only individuals aged 18-49 were asked about fertility intentions, so only people of these ages are included in the analysis. Additionally, people who know that they or their partner are definitely not physically able to have children are excluded from the sample. Also, since the interest of this study is in the fertility decision-making process, the individuals who were currently pregnant or trying to get pregnant at the time of the interview were excluded from the sample.

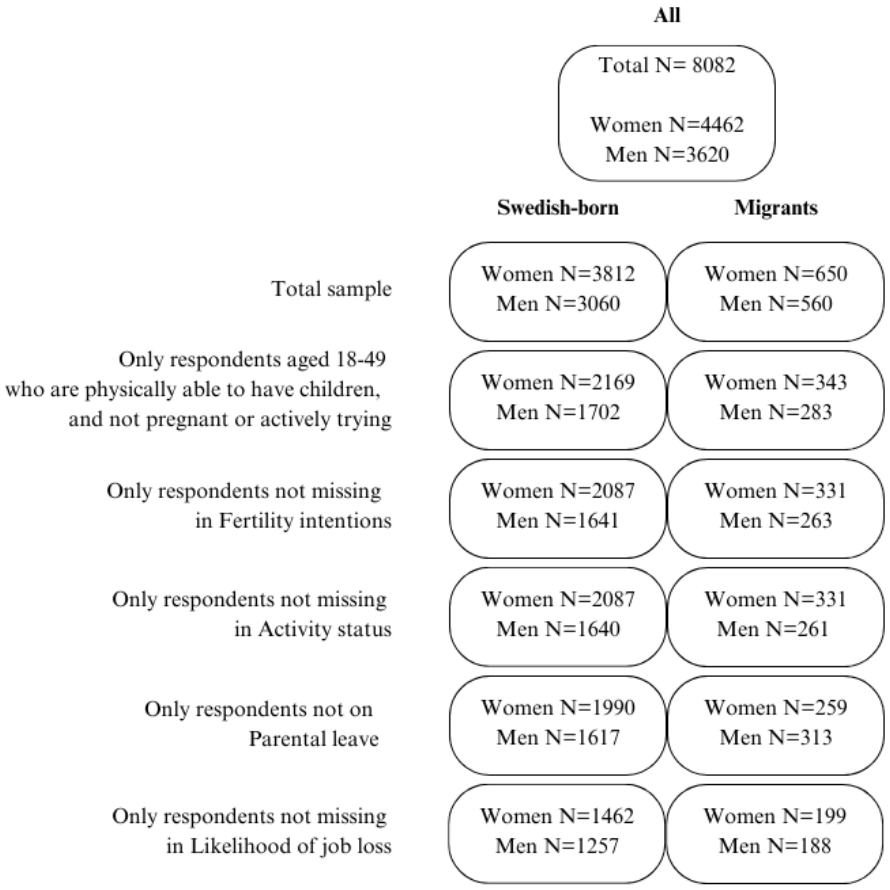
In the analyses on the effect of *the Likelihood of job loss* on fertility intentions, only employed and self-employed individuals are included since they are the only ones that the question asked. As previously discussed, the people on parental leave were excluded from the analyses of the effect of *Activity status* on fertility intentions.

The last model, looking at the moderating impact of the duration of stay on the effect of activity status on fertility intentions, is only estimated for migrant women. That is because the cross-tabulation of migrant men with activity status shows categories with no or extremely few observations. Therefore, with the data available, it is not meaningful to conduct the analysis for migrant men. For the same reason, this analysis was not repeated using the *Likelihood of job loss* as the main independent variable.

Missing values on the dependent variable, *Fertility Intention*, are dropped. Also, the missing values on the main independent variable (*Activity Status* or *Likelihood of job loss*) were dropped in each separate analysis, as the effect cannot be analysed for the people missing in the main explanatory variable. There were no missing values on the *Migrant background* variable.

There were also no missing values on *Parity, Age,* or the dummy for *Cohabitation status*. However, missing values in the variables of *Education level* and *Household income* were kept in their own category, and the models were estimated with them to maximise the sample size and avoid selection bias.

Figure 3: Flow Chart of the Sample Size



5.10. Ethical Considerations

The GGS data used in this study was applied for by the author and received upon approval of application through the Generations and Gender Programme at the Netherlands Interdisciplinary Demographic Institute. The GGS data is anonymised, and no attempts to identify individuals in the data have been made. The data has been handled with care, and the microdata has not been shared with anyone. Research has been conducted following good research practice, adhering to the guidelines of The Swedish Research Council and The European Code of Conduct for Research Integrity by ALLEA (ALLEA – All European Academies, 2017; Swedish Research Council, 2017).

In order to be transparent, the uncertainties and limitations in the results and the study as a whole are reflected upon and discussed throughout the thesis, specifically under Robustness Checks and Limitations. There is no intention to draw false conclusions or mislead in any way.

It is acknowledged that this research concerns minorities, a politically charged and sensitive topic. The responsibility that comes with handling such sensitive topics is recognised and respected. There is no intention to cause harm or contribute to the stigmatisation of minorities. Instead, objectivity is strived for, and the researcher takes full accountability for the research. The research is conducted with great care and respect.

6. Results

6.1. Descriptive Results

The weighted descriptive results are shown in Table 1. As expected, a larger share of migrants state a positive intention compared to the Swedish-born: a higher proportion of migrant men (21,8%) intend to have children compared to Swedish-born men (18,3%) and similarly, a higher proportion of migrant women (23,1%) plan childbearing in comparison to the Swedish-born women (21,8%). Also, among both migrants and the Swedish-born, a larger share of women have a positive childbearing intention compared to men.

Regarding activity status, it is observed that a lower share of migrants is in employment compared to the Swedish-born, both among men and among women. Especially the lower share of migrant women in employment stands out: only 54,9 per cent of migrant women are employed compared to 64,1 per cent of Swedish-born women. The difference is also large compared to the migrant men, although the share of migrant men in employment (63,4 %) is also lower than the share of Swedish-born men (66%) or women (64,1%). A substantially higher share of migrant women is also unemployed compared to all others. Out of migrant women, 12,7 per cent are unemployed, the highest share of all the groups. On the other hand, Native-born women have the lowest share of unemployed: only 3,7 per cent. Comparing the men, a larger share of migrants is unemployed (6,8%) compared to the Swedish-born (4,8%), but the difference is not as substantial as among the women.

On the other hand, the share of self-employed is slightly higher among migrant women (4,4%) compared to Swedish-born women (2,7%). The difference in the proportion of self-employed is not large for men: 6,9 per cent of migrant men are self-employed compared to 7,2 per cent of native-born men. Concerning education, Swedish-born women stand out with 25,6 per cent in education or training. Out of migrant women, a smaller proportion compared to the Swedish-born women, 21,3 per cent, are in education, but it is still a slightly higher share than among both migrant (20,4%) and Swedish-born men (19,3%).

Although the majority has secure employment, the more precarious employment situation of migrants is visible when looking at the share of migrants having non-permanent contracts. A much higher share of migrant men (13,6%) and women (14,2%) have fixed-term contracts compared to Swedish-born men (5,6%) and women (8,7%). Similarly, a higher percentage of migrant men (12,6%) and women (20,8%) report being unsure about the likelihood of losing their job in the coming 12 months compared to Swedish-born men (7,4%) and women (10%). The share of migrant men likely to lose their job (9,3%) also stands out compared to all others, out of which only 3,0-4,1 per cent state to are likely to lose their job.

With the rest of the variables, it is noted that, expectedly, a higher share of migrants has three or more children compared to the Swedish-born. In all four groups, over 50 per cent live with a partner. Migrant women have the highest share of cohabitation – 67,5 per cent live with a partner. The very high share of migrants with tertiary education is notable – out of migrant women, 47,6 per cent, and out of migrant men, 42,3 per cent have tertiary education compared to 33,4 per cent out of Swedish-born women and 25 per cent out of Swedish-born men. Regarding household income, the largest share in all the groups has a household income between 20 000 to 60 000 €. However, the more vulnerable economic situation of migrants is visible in the data: a higher share of migrants has a household income less than that compared to the Swedish-born, and a higher share of the Swedish-born have a household income more than that of the migrants.

Most migrants arrived over five years ago, 65 per cent of men and 71,9 per cent of women. Most migrants come from Western countries (28,9 per cent of men and 22,7 per cent of women), Eastern Europe (18,1 per cent of men and 31,1 per cent of women) or the Middle East and North Africa (21,7 per cent of men and 14,6 per cent of women).

Table 1: Descriptive Statistics

Weighted proportions.

	Swedish-born		*Migrants*	
	Men (N=1 641)	***Women (N=2 087)***	***Men (N=263)***	***Women (N=331)***
	% (Weighted results)			
Fertility Intentions				
Definitely/Probably Yes	18,3	22,3	21,8	23,1
Definitely/Probably No	81,7	77,7	78,2	76,9
Activity Status				
In education or training	19,3	25,9	20,4	21,3
Employed	66,0	64,1	63,4	54,9
Self-Employed	7,2	2,7	6,9	4,4
Unemployed	4,8	3,7	6,8	12,7
Other	2,6	3,6	2,4	6,7
Contract Type				
Permanent	91,0	86,2	79,6	81,5
Fixed term	5,6	8,7	13,6	14,2
Temporary	2,3	3,4	4,8	2,7
No written contract	1,1	1,7	2,1	1,6
Likelihood of Job Loss				
Unlikely	89,6	86,4	78,2	75,1
Unsure	7,4	10,0	12,6	20,8
Likely	3,0	3,6	9,3	4,1
Parity				
0	58,7	54,8	57,9	47,1
1	10,9	11,4	11,1	16,2
2	23,7	25,6	19,6	24,5
3+	6,8	8,2	11,4	12,1
Age				
18-24	21,1	24,7	18,0	13,8
25-29	16,9	16,3	14,9	14,4
30-34	18,8	20,8	14,2	19,5
35-39	12,5	13,2	17,8	16,0
40-44	17,2	14,0	17,5	21,3
45-49	13,6	11,0	17,7	15,0
Cohabitation status				
Lives with a partner	56,4	58,1	53,8	67,5
Other	43,6	41,9	46,2	32,5
Education				
Primary/Lower-secondary education	19,1	20,3	18,8	18,8
Upper-secondary education	41,4	33,8	27,0	20,8

Post-secondary education	14,5	12,5	12,0	12,9
Tertiary education	25,0	33,4	42,3	47,6
Missing	0,5	0,5	13,6	13,0
Household Income				
4 999 € or less	1,6	0,1	6,1	7,4
5 000 to 9 999 €	1,1	1,6	5,1	1,7
10 000 to 19 999€	6,8	9,3	8,9	11,9
20 000 to 39 999€	26,7	24,8	29,1	24,1
40 000 to 59 999€	20,0	20,0	19,3	20,2
60 000 to 79 999 €	21,1	21,4	13,3	14,9
80 000 to 99 999 €	12,8	12,4	6,5	8,6
100 000 € or more	9,9	9,5	5,6	5,0
Missing	0,0	0,4	6,2	6,2
Time Since Migration				
<5 years since arrival			34,7	28,1
>5 years since arrival			65,3	71,9
Country of Origin				
Western countries			28,9	22,7
Eastern European countries			18,1	31,1
Middle Eastern/ North African countries			21,7	14,6
Sub-Saharan African countries			7,6	8,4
Latin American and Caribbean countries			8,1	4,5
East Asian countries			5,0	8,3
South and South East Asian countries			10,6	10,4

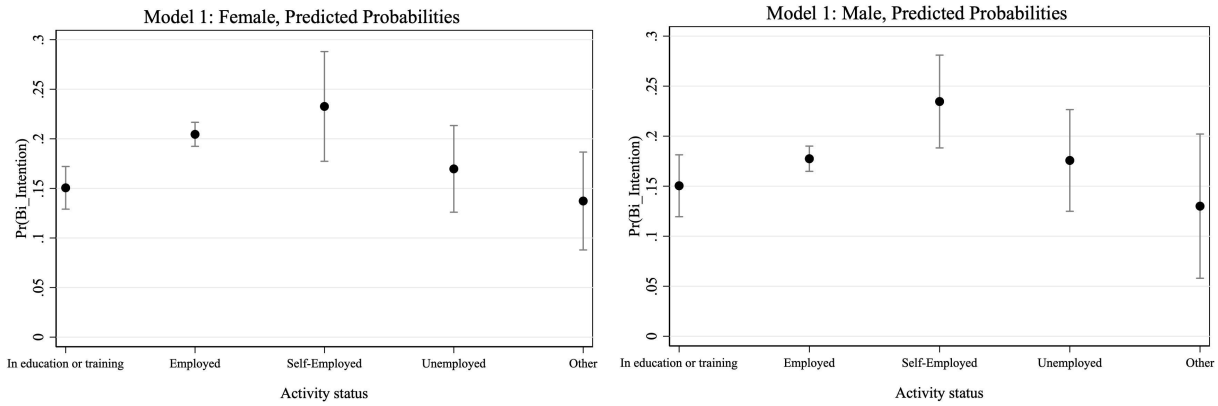
6.2. The Effect of Activity Status and Likelihood of Job Loss on Short-Term Fertility Intentions in Sweden

Binary logistic regression models were used to analyse the effect of activity status (model 1M and 1W) and the likelihood of job loss (model 2M and 2W) on short-term fertility intentions in Sweden. Both models are stratified by gender. Results from the final models are presented graphically in Figures 4, 5, 6 and 7 as predicted probabilities. The complete model results in odds ratios can be found in Appendix 11.1.1-11.1.2.

Figures 4-5: Model 1 Predicted Probabilities

Predicted probabilities of stating a positive fertility intention by activity status. Models control for migrant background, age, age squared, parity, cohabitation, education level and household

income and are stratified by gender. Error bars denote 83.5 % confidence intervals. Unweighted estimates.



First, looking at the predicted probabilities of stating a positive fertility intention by activity status, it can be noted that the general patterns are relatively similar for both men and women. However, there is more of a difference between unemployed and employed women but no substantial difference between unemployed and employed men.

For women, the highest predicted probability of stating a positive intention (23,2%) is among the self-employed. However, the confidence interval is wide, indicating uncertainty in the estimate. The confidence interval of predicted probability for the self-employed women also includes the estimated predicted probability of the employed women, indicating no statistically significant difference between the two categories.

The predicted probability of stating a positive fertility intention is 20,5 per cent for employed women, and the estimate is certain with a very narrow confidence interval. Employed women have the second highest probability after self-employed women to state a positive fertility intention.

The predicted probability of stating a positive intention for women in unemployment (17%) is lower than for women in self-employment or employment. Again, there is uncertainty in the estimate, and the confidence interval includes the predicted value for the employed. Thus, the difference between the two categories, employed and unemployed, is not statistically significant. However, there is a weak difference between the predicted probabilities for unemployed women and self-employed women – the confidence intervals still overlap but do not

include the point estimates for the other category. Although the results should be taken with caution given the uncertainty in the estimates, the results suggest that the probability of stating a positive fertility intention is lower for women in unemployment than for women in employment (self-employed or employed).

Women in education or training have the lowest predicted probability of stating a positive fertility intention (15%). This estimate is also more certain, with a smaller confidence interval. The estimated value is statistically different from the employed – the confidence intervals do not overlap. The confidence intervals of the predicted probability for women in education and women in self-employment also only minimally overlap, indicating a difference between the two. There is no statistically significant difference between the women in education and unemployment. Thus, the results suggest that the probability of stating a positive fertility intention is lower for women in education than those in employment (employed or self-employed).

Also, for men, the self-employed have the highest predicted probability of stating a positive intention (23,4%) out of the different activity statuses. However, the estimate is uncertain, with a wide confidence interval. The employed men have the second highest predicted probability (17,7%), and the estimate is relatively certain. The confidence intervals of the predicted probabilities for the employed and the self-employed men overlap, but only slightly, indicating a difference in probability between the two categories.

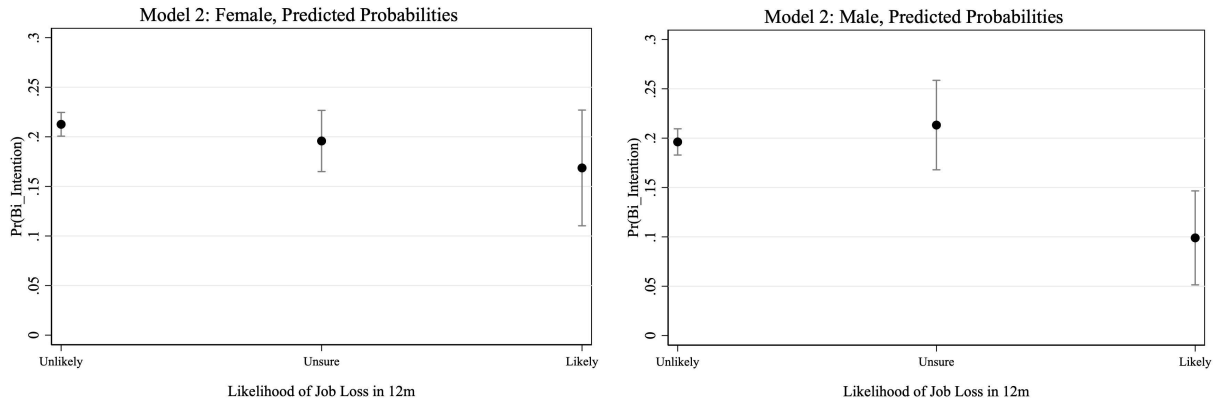
However, the predicted probability of stating a positive intention for unemployed men is 17,6 per cent, which is very close to the predicted probability of employed men. Nonetheless, the estimated probability for unemployed men is more uncertain. There is no statistically significant difference in the probability of stating a positive intention between employed and unemployed men. Thus, for men, the probability of stating a positive fertility intention is not lower for the unemployed than for those employed. The difference in predicted probability between the unemployed and the self-employed men is more substantial but still weak: the confidence intervals overlap, although they do not include the point estimate of the other category.

The men in education or training have the lowest predicted probability of stating a positive intention (15%). The confidence interval of the predicted probability for men in

education does include the point estimate for the employed men, but not vice versa. So, although the results suggest that the probability of stating a positive intention is lower for men in education than for men that are employed, there is no statistically significant difference in probability between the two. There is, however, a significant difference between the predicted probabilities of the men in education and the self-employed men – the confidence intervals do not overlap. That indicates that the probability of stating a positive intention is lower for men in education compared to self-employed men.

Figures 6-7: Model 2 Predicted Probabilities

Predicted probabilities of stating a positive fertility intention by the perception of the likelihood of job loss. Models control for migrant background, age, age squared, parity, cohabitation, education level and household income and are stratified by gender. Error bars denote 83.5 % confidence intervals. Unweighted estimates.



For women, the predicted probability of stating a positive intention is the highest for the ones perceiving job loss as unlikely (21,3%). The predicted probability for the women unsure about the likelihood of losing their job is lower (19,6%), but the estimation is more uncertain. The confidence intervals also substantially overlap, suggesting that there is no statistically significant difference in the probability of stating a positive fertility intention between the two groups. The difference is not very substantial, either.

The predicted probability of stating a positive intention is the lowest for the women that perceive job loss to be likely (16,9%). The estimate is, however, uncertain with a wide

confidence interval that includes the estimates for both the unlikely and the unsure categories. The pattern is, however, clear: despite uncertainty, the results suggest that the probability of stating a positive fertility intention for women perceiving to be likely to lose their job is lower than for the ones perceiving job loss to be unlikely.

For men, the predicted probability for the ones perceiving job loss as unlikely (19,6%) is lower than for the ones perceiving it as uncertain (21,3%). However, the two estimated probabilities do not substantially or significantly differ. The estimated probability for the ones unlikely to lose their job has more certainty, whereas the predicted probability for the ones unsure has a wide confidence interval and is, thus, more uncertain.

For men, too, the predicted probability of stating a positive fertility intention is the lowest for the ones perceiving job loss as likely (9,9%). Despite the large confidence interval, the confidence intervals of the predicted probabilities for the men for whom job loss is unlikely and for whom it is likely or uncertain do not overlap. Thus, there is a statistically significant difference between the groups – men unlikely or unsure about the likelihood of losing their job have a higher predicted probability of stating a positive fertility intention than the ones likely to lose their job.

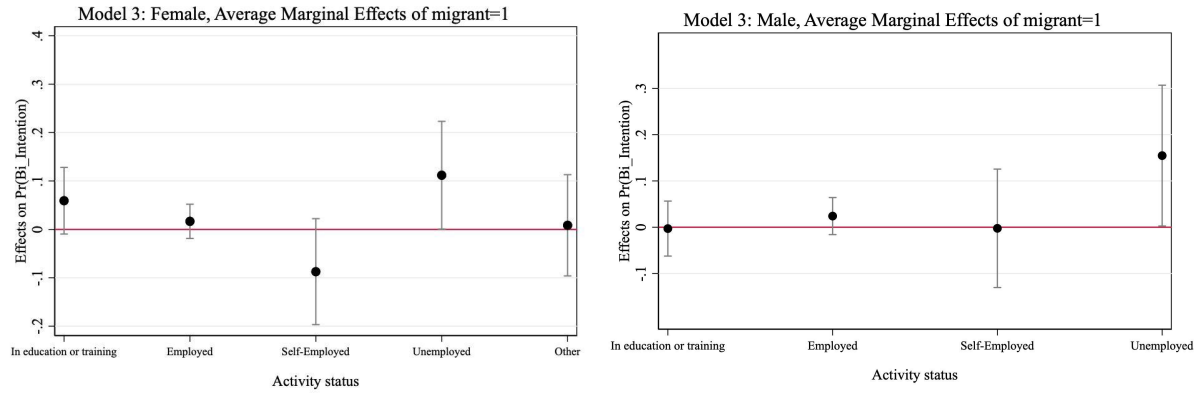
6.3. The Effect of Activity Status on Short-Term Fertility Intentions by Migrant-Background

Binary logistic regression models were used to analyse the difference in the effect of activity status on short-term fertility intentions for migrants and the Swedish-born population. The main predictor in this analysis is activity status, which has been interacted with migrant background to allow the effect of activity status on fertility intentions to differ between migrants and the Swedish-born. The models are stratified by gender. Results from the final model are presented graphically in Figures 7 and 8 using average marginal effects (AMEs), since the interest of the study is in the differences between migrants and the Swedish-born. Plots with predicted probabilities are presented in Appendix 11.2.2. The AMEs give the difference in probability, in terms of percentage points (pp), of stating a positive intention associated with a one-unit change in the predictor. The analysis focuses on the effect of activity status, whereby

the effects of the control variables are not discussed in depth nor presented here. The complete model results in odds ratios can be found in Appendix 11.1.3.

Figures 7-8: Model 3 Average Marginal Effects

Average marginal effects of being a migrant compared to being Swedish-born on the probability of stating a positive fertility intention by activity status. Models control for age, age squared, parity, cohabitation, education level and household income and are stratified by gender. Error bars denote 83.5 % confidence intervals. Unweighted estimates.



The AMEs for females clearly show that there is no difference in the propensity of stating a positive fertility intention between migrants and the Swedish-born when in employment: the estimate is not far from zero (0,0165 indicating a 1,7 pp increase in probability for being a migrant), and the confidence interval is narrow. Thus, based on these results, it can be stated that the effect of being employed does not substantially differ between migrants and Swedish-born.

Concerning education, the results suggest that migrant women could be more likely than Swedish-born women to intend to have a child when in education. According to the estimates, the probability of stating a positive fertility intention increases by 5,9 pp for being a migrant woman in education or training compared to being a Swedish-born woman in education or training. However, the result is not statistically significant, and the confidence interval is wider. Therefore, the result should be taken with caution.

Also, regarding unemployed women, the results indicate that the probability of intending to have a child is higher for migrants compared to the Swedish-born. The difference is also more

pronounced: the AME of unemployment suggests a significant difference between the two groups – the confidence interval, despite being wide, does not stretch below zero. Hence, the AME implies that being an unemployed migrant woman compared to being an unemployed Swedish-born female increases the probability of stating a positive fertility intention by 11,1 pp holding everything else constant, which is a substantial difference between the two groups.

Interestingly, among the self-employed women, the difference goes in the other direction: migrant women in self-employment seem to have a lower propensity of stating a positive fertility intention than Swedish-born women. The AME of self-employment indicates an 8,7 pp decrease in the probability of being a migrant compared to being a Swedish-born woman when holding everything else constant. However, the confidence interval is relatively large, and the result is not statistically significant, whereby it should be carefully interpreted. There is uncertainty in the estimates, and the null hypothesis cannot be rejected.

Like for the women, for men, the AME of employment shows that being employed affects the migrant and Swedish-born men's fertility intentions in a somewhat similar manner: there is no substantial difference in the effect of employment between migrant and Swedish-born men. The results suggest that being an employed migrant man relative to being an employed Swedish-born man increases the propensity to state a positive fertility intention by 2,8 pp, keeping everything else constant. However, the narrow confidence interval does stretch below zero.

For men, there are no differences between migrant and Swedish-born men in the effect of being in education or self-employed on fertility intentions, either. Although the confidence intervals are wider, the estimated AMEs are even closer to zero than for employment, indicating no difference between migrants and natives in self-employment or education.

However, as for the women, a significant difference is observed concerning the effect of unemployment: being an unemployed migrant man compared to being an unemployed Swedish-born man increases the probability of stating a positive fertility intention by 15,5 pp, holding everything else constant. There is uncertainty in the estimate, given the wide confidence interval. However, the confidence interval does not stretch below zero, indicating a statistically significant difference between the migrant and the Swedish-born men.

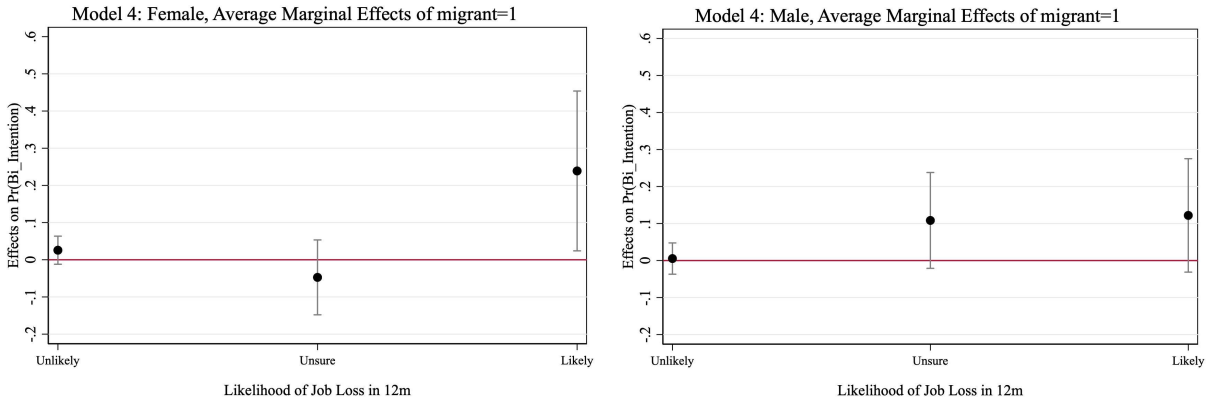
The control variables' effects follow previous studies' findings, showing expected results. To summarise, people in higher parities are less likely to plan childbearing than people in parities 0 and 1. Cohabiting respondents are more likely to state a positive intention than non-cohabiting people. People with tertiary education are most likely to have an intention to have children compared to people in all other education levels. Of all income categories, people with middle income, 20 000 to 39 000, are most likely to plan childbearing. The association of age with fertility intentions is curvilinear.

6.4. The Effect of the Perception of Likelihood of Job Loss on Short-Term Fertility Intentions by Migrant-Background

In the second part, binary logistic regression models stratified by gender were estimated to analyse the difference in the effect of the perception of the likelihood of job loss on short-term fertility intentions for migrants compared to the Swedish-born. Here, only the employed individuals are included in the analysis, given that they were the only ones asked about the likelihood of job loss. Like the previous analysis, the migrant background is interacted with the likelihood of job loss and the results of the main association of interest are presented as AMEs in figures 9 and 10. Full models and predicted probabilities can be found in Appendix 11.1.5 and 11.2.5.

Figures 9-10: Model 4 Average Marginal Effects

Average marginal effects of being a migrant compared to being Swedish-born on the probability of stating a positive fertility intention by likelihood of job loss. Models control for age, age squared, parity, cohabitation, education level and household income and are stratified by gender. Error bars denote 83.5 % confidence intervals. Unweighted estimates.



The AMEs show no substantial differences between migrant and Swedish-born women on the propensity of stating a positive fertility intention when job loss is perceived unlikely, so when one's job is perceived secure, or when the respondent is unsure about the likelihood of losing one's job.

For men, there are no statistically significant differences between migrants and the Swedish-born at any level of likelihood of job loss regarding stating a positive fertility intention. However, the estimates suggest that migrant men that are unsure about the likelihood of losing their job and migrant men that perceive job loss to be likely have a slightly higher propensity of stating a positive fertility intention compared to the Swedish-born men. However, the estimates are uncertain and not statistically significant.

For women, nevertheless, there seems to be a significant and substantial difference between migrants' and the Swedish-born's propensity to state a positive fertility intention when job loss in the coming 12 months is perceived as likely. Although there is high uncertainty in the estimate illustrated by the large confidence interval, the result suggests that when job loss is likely, being a migrant relative to being a Swedish-born woman increases the probability of stating a positive fertility intention by 23,9 pp. If accurate, that is a substantial difference – migrant women perceiving high employment uncertainty are much more likely to plan childbearing than Swedish-born women with the same perception of the likelihood of job loss.

However, with the considerably large confidence intervals and the small number of migrant women (8) reporting to be likely to lose their job in the data, the results must be taken with great caution and care. Although the results point to a possible difference between migrants

and natives regarding the effect of the perceived likelihood of job loss on fertility intentions, drawing bold conclusions should be avoided based on these models alone.

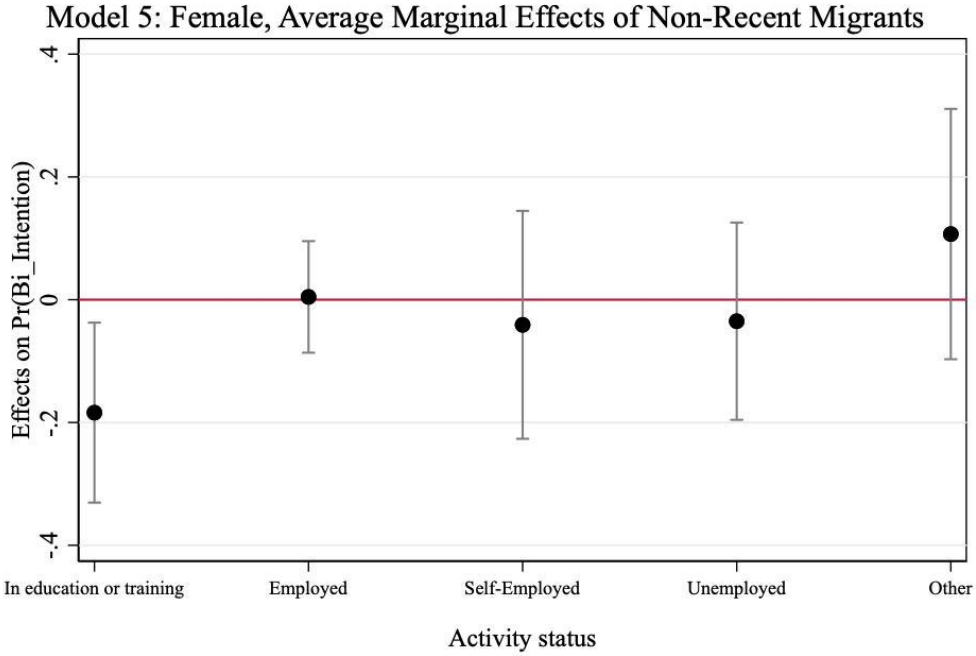
Again, control variables follow the expected patterns observed in previous studies.

6.5. The Effect of Activity Status on Short-term Fertility Intentions by Duration of Stay for Migrant Women

In the last part of the analysis, binary logistic regression models for female migrants only were estimated to analyse how the length of stay affects the effect of activity status on short-term fertility intentions. The length of stay (having stayed in Sweden for five or more or less than five years) interacts with the activity status variable to allow the effect to vary between the two categories. Results from the final model are presented graphically in Figure 11 using AMEs, since the interest is in the differences between the recently arrived migrants and those who have stayed longer in Sweden. Plotted predicted probabilities and complete model results can be found in Appendix 11.2.6 and 11.1.7, respectively.

Figure 11: Model 5 Average Marginal Effects

Average marginal effects of being a non-recently arrived migrant woman (length of stay >5 years) compared to being a recently arrived migrant woman (ref., length of stay <5 years) on the probability of stating a positive fertility intention by activity status. Models control for age, age squared, parity, cohabitation, education level, household income, and region of origin. Error bars denote 83.5 % confidence intervals. Unweighted estimates.



The results suggest no difference in probability between the employed recently arrived female migrants and the employed female migrants who have stayed in Sweden for longer – the AME of employed is very close to zero (0,0045), albeit not statistically significant.

Concerning education, the difference is pronounced: having stayed in Sweden for five years or longer decreases the probability of stating a positive intention by 18,4 pp compared to the recently arrived migrant women, holding everything else constant. The confidence interval is wide, indicating some uncertainty, but does not stretch over zero, indicating a difference between the two groups. The difference is substantial – when in education, the newly arrived migrant women are much more likely to intend to have children than the migrant women who have stayed for longer.

There seem to be no substantial differences in length of stay among the self-employed and the unemployed migrant women. The AMEs are close to zero for both activity statuses and are not statistically significant.

7. Robustness Checks and Limitations

Different types of robustness checks for models 1M and 1W, regarding the effect of activity status on fertility intentions in Sweden, have been explored, and all the results are consistent: Although there are slight variations in the estimates, all models show a consistent trend. The same patterns emerge when weights are used when parental leave is included as a category of activity status, when the model is fitted without household income, when only complete cases are included in the analysis and when a linear probability model is fitted.

Similar robustness checks have been run for models 2M and 2W. The patterns are the same for models without household income, with only complete cases included and when a linear probability model is fitted. When weights are used, the pattern is the same for men but changes slightly for women. According to the weighted model, women perceiving job loss to be likely no longer have the lowest predicted probability of stating a positive intention, but the estimate has high uncertainty.

Regarding the robustness checks of models 3M and 3W, which examine the difference in the effect of activity status on fertility intentions between migrants and Swedish-born, there is some variation in the magnitude of the difference. Nonetheless, generally, the patterns are the same. Only in the weighted model, the difference in the effect of unemployment between migrant and Swedish-born women is estimated much smaller.

A version of model 3 using an activity status variable where the category employed was further divided between the different contract types was also estimated. Regardless, it showed no significant differences between migrants and natives by contract type, following the same patterns as the findings of (Andersson and Scott, 2005, 2007) concerning actual fertility behaviour. Therefore, the final models were estimated with the simpler activity status variable without the contract types included. The plotted results from the model including contract types, can be found in Appendix 11.2.3-11.2.4.

Model 4, examining the difference in the effect of perception of the likelihood of job loss on fertility intentions between migrants and Swedish-born, seems robust based on the robustness checks. The pattern is the same when the model is estimated with weights when household income is excluded, when only complete cases are included and when a linear probability model

is estimated. However, as mentioned before, the generalisability of the results of model 4 is still weak, given the low number of migrants that have responded that they perceive it likely to lose their job.

The results of model 5, looking at the difference in the effect of activity status on fertility intentions by time since migration for female migrants, are robust according to the robustness checks. The difference in the effect of being in education on stating a positive intention between the recently arrived migrants and the migrants that have arrived long ago remains when the model is weighted when household income is not included, when the category of being on parental leave is included and when a linear probability model is fitted. Doing a complete case analysis was not meaningful since there were empty cells.

Despite that the results can be deemed reasonably robust, there are limitations to the analysis. One obvious limitation is related to the data. The survey's very low response rate, 27%, poses concerns about data quality. Additionally, the share and number of migrants in the dataset are unfortunately low. Whereas the share of migrants in Sweden is 20,4% as of 2023 (Statistics Sweden, 2023b), it is only 15% in the data. Given the low response rate, it could also be expected that selection into the sample has taken place, especially for migrants. Migrant and ethnic minorities are generally harder to reach compared to native populations. It can also be expected that more skilled and integrated migrants with sufficient language skills are more likely to respond to a survey than the more disadvantaged migrants that do not speak the language (Deding, Fridberg and Jakobsen, 2008; Font and Méndez, 2013). That could potentially lead to bias in this study, where migrants in a more precarious situation are of specific interest.

Given the small sample size and data limitations, it was not possible to conduct analyses based on the migrant country of origin. It is acknowledged that migrants are not a homogenous group – different countries of origin could also generate differences in the effect of precarious employment on fertility intentions. Also, for the same reason, it was only possible to conduct the last analysis looking at the difference in the effect of activity status on fertility intentions by the length of stay on women. Additionally, it was not feasible to do separate analyses by parity, although the effects of precarious employment on fertility intentions could differ for people starting a family and respondents intending to have additional children. Similarly, it was not

meaningful to stratify the models by union status or cohabitation status. Nevertheless, parity and cohabitation status were controlled for in the models. The GGS does not include information on the reason for migration, whereby that aspect could also not be explored.

Due to the high uncertainty in some of the estimates, the low number of observations in some categories and the questionable data quality, the generalisability of the results is limited. However, this is the first attempt to conduct a study like this, and robust patterns did emerge in the data.

8. Discussion

Migrants exhibit higher vulnerability and face challenges in terms of social integration and labour market participation compared to native populations. They tend to be disproportionately represented in unemployment rates and precarious employment positions. The principal aim of this study was to find out whether the effect of a precarious employment situation on short-term fertility intentions differs between migrants and Swedish-born, and it has contributed to understanding how childbearing-decision-making is differently affected by employment precarity for migrants and natives. The study contributes to the scarce body of research on migrant fertility intentions and adds a rarely studied gender aspect of migrant fertility intentions by including both men and women in the analysis. The study also contributes to the study of the effect of subjective perceptions of job security on fertility intentions while also including a more classical approach by looking at the effect of activity status.

The results support the hypothesis that a precarious employment situation has a negative effect on fertility intentions in Sweden (H1). Among women, unemployment seems to lower the propensity to intend childbearing in the near future. For women, being self-employed or employed is positively associated with fertility intentions, following the previous findings that stable employment is positively associated with fertility (Andersson, 2000; Lundström and Andersson, 2012; Mussino *et al.*, 2021; Alderotti, Mussino and Comolli, 2022). The same seems true for fertility intentions – women are most likely to plan childbearing when in stable employment.

Regarding the predicted probabilities for model 1W and 1M including the contract types (Appendix 11.2.1) it is also noted that it is specifically self-employment and permanent employment that are associated with higher likelihood of stating a positive fertility intention. The probability is lower when one is in fixed-term or temporary employment for both men and women. This finding gives further support for the hypothesis that employment precariousness has a negative effect on fertility intentions.

For men, the fertility intentions of the unemployed do not seem to differ from the employed significantly. However, looking at the effect of the subjective perception of job loss, the men who perceive job loss to be likely are less likely to intend childbearing than the ones who perceive their job to be more secure. For women, the pattern is not as clear. Nevertheless, the perception that job loss is likely decreases the probability of having a positive fertility intention compared to the ones perceiving their job as more secure.

The previous finding that migrants and Swedish-born people act in a similar manner when in employment is supported (Andersson and Scott, 2005, 2007) – there are no substantial differences in fertility intentions between migrant and native men or women who are employed. Thus, the previous findings concerning fertility behaviour are also confirmed regarding fertility intentions: the effect of being employed on fertility intentions is the same for migrants and the Swedish-born in Sweden. Nevertheless, some differences between migrants and natives are found among self-employed women. Whereas self-employed Swedish-born women are most likely to intend to have children, migrant women in self-employment are the least likely to have children out of all the activity statuses considered. This difference could be due to differences in the type of self-employment migrants and Swedish-born women typically are in. More research is required to investigate this difference further.

The results confirm that there are differences in the effect of precarious employment on fertility intentions between migrants and Swedish-born – the counter-hypothesis that there are no differences is not supported (H2c). Notably, the results support the previous findings that Swedish-born women are less likely to intend or have more children when not employed (Andersson, 2000; Lundström and Andersson, 2012; Mussino *et al.*, 2021; Alderotti, Mussino and Comolli, 2022) – the Swedish-born women studying or unemployed are the least likely to

plan childbearing. For the migrants, despite the high uncertainty of the estimates, the pattern is not as clear. Instead, the migrant women in unemployment have the highest predicted probability of stating a positive fertility intention out of all activity statuses. The same is found for men. Regarding the effect of the perception of job security, the results are more uncertain but seem to support the conclusion that migrants are more likely to intend to have children in precarious employment situations. More research is needed to confirm this conclusion, however.

These findings support the hypothesis that for migrants, the effect of a precarious labour market situation, at least in the form of unemployment, on fertility intentions is positive (H2b). Thus, the effect is not weaker than for the Swedish-born (H2a) but has an opposite direction altogether. Concerning fertility behaviour, Wood and Niels (2017) found similar results in relation to migrants in Belgium and Alderotti et al. (2022) for migrant women in Sweden. Regarding fertility intentions, Mussino et al. (2021) found that the link between employment and fertility intentions was weaker for migrants than for natives – migrant fertility intentions were less related to external constraints.

A possible explanation for this difference is that being in a more vulnerable labour market situation with worse prospects of finding stable employment than the Swedish-born, migrants start planning to have children as a method for uncertainty reduction (Friedman, Hechter and Kanazawa, 1994; Wood and Neels, 2017). However, the uncertainty reduction hypothesis might not be as viable of an explanation for men as it is for women. Since most of the previous research on migrants has only included women, the viability of the uncertainty reduction hypothesis for men has not been extensively discussed in the literature. An alternative explanation is that migrants prioritise building a family over employment and economic security, as suggested by Mussino et al. (2021). Another possible explanation could be the so called "no hope" hypothesis: if there is no hope for change, why wait. This hypothesis was, however, not tested in this study but could be considered in future studies.

However, the patterns are not identical for men and women. It is possible that the mechanisms at play are different for the different genders. The findings are inconclusive regarding whether the negative effect is more prominent among women than men (H3). There are gender differences in the patterns, but given the relatively high uncertainty in the estimates, it

is not possible to draw conclusions on whether the magnitude of the difference is more prominent for women than men. Regarding gender patterns, the difference between self-employed migrants and Swedish-born is only found among women, and the high likelihood of job loss seems to play a more negative role in the fertility intentions of men in Sweden in general. In previous research, it has been found that the employment situation of men is more strongly related to fertility behaviour and intentions than the employment situation of women (Fahlén and Oláh, 2018; Alderotti *et al.*, 2022; Gatta *et al.*, 2022). These previous studies argue that the stronger link between employment and fertility among men than women reflect the role of men as the main provider. In the Swedish context with high female labour market participation and policy promoting gender equality, it is expected that gender differences in the effect of employment on fertility intentions would not be as extensive, at least among the Swedish-born, whereby the finding is surprising. In fact, Andersson (2000) and Lundström and Andersson (2012) found that the positive link between employment and fertility was stronger for women than for men in Sweden.

However, in the analyses comparing migrants and Swedish-born, this observed gender pattern is not as clear. Instead, looking at the predicted probabilities of model 3 (Appendix 11.2.3), it looks like the gender difference observed is primarily driven by the difference found between migrant men and women. In contrast, Swedish-born men and women show similar patterns concerning the effect of perceived job security on fertility intentions. The more prominent gender difference between migrants could have to do with migrants coming from contexts with a more traditional division of labour and gender roles. The result highlights the importance of looking at both migration background and gender together in analyses of employment and fertility intentions in the future, too. More detailed analyses are needed regarding the gender differences in the effect of employment situation on fertility intentions comparing migrants and natives.

No differences were detected concerning the effect of precarious employment on fertility intentions between newly arrived and long-standing migrant women. Therefore, neither the hypothesis that the effect of precarious employment situation on fertility intentions would be more negligible for the newly arrived (H4a) nor that it would be stronger for the newly arrived

compared to more long-standing migrants (H4b) is supported. Instead, the fertility intentions of the newly arrived and long-standing migrants seem to respond similarly to employment, self-employment, and unemployment. Although they looked at the age at arrival rather than the duration of stay, Alderotti et al. (2022) and Woods and Neels (2017) found contrasting results in relation to the moderating effect of integration. In these studies, it was found that having employment was more crucial for the childbearing plans and behaviour when the migrant had arrived at a young age and was thus more integrated into society and the labour market. In this study, age at arrival was not analysed. However, concerning the duration of stay, no such integration effect producing differences between the recently arrived and the long-standing migrants was found.

The only difference is found regarding the effect of education or training on fertility intentions. The more long-standing migrants are less likely to have a positive intention when in education relative to the newly arrived migrants that are in education. There could be differences in the type of education the newly arrived and the more long-standing migrants attend, which could explain some differences. The newly arrived migrants often enrol in Swedish language courses for immigrants (SFI), while the long-standing migrants could be expected to be in other types of education or training. It could also be that right after arrival in education is seen as a good time for childbearing before entering the labour force, whereas after integrating into the Swedish labour market and society more, being a student is perceived as a less viable time for having children.

9. Conclusion

In conclusion, the effect of a precarious employment situation on fertility intentions does differ between migrants and the Swedish-born. The findings suggest that the impact of unemployment on fertility intentions differs between migrant and Swedish-born women and men. Specifically, being an unemployed migrant, compared to being unemployed and Swedish-born appears to increase the likelihood of expressing a positive fertility intention. The time since

arrival for female migrants does not moderate the effect of employment status (employed, self-employed, or unemployed). However, for female migrants in education who have resided in Sweden for at least five years, the probability of stating a positive fertility intention is substantially reduced compared to newly arrived migrant women. Moreover, the probability of expressing a positive fertility intention increases when a migrant woman perceives job loss as likely in the near future relative to Swedish-born women with similar job security perceptions. Regarding men, the results are less conclusive, with no substantial differences observed in the impact of the likelihood of job loss on fertility intentions between migrant and Swedish-born men. The study suggests that despite the importance of the institutional setting for fertility decision-making, other mechanisms are at play, too: migrants and Swedish-born individuals seem to respond differently to labour market uncertainties and especially unemployment.

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12. Appendix

12.1. Model Results, Odds Ratios and AMEs

12.1.1. Model 1: Full Model Results in Odds Ratios

Variables	*Model 1: Female*	*Model1: Male*
Activity status		
In education or training	0.577 **	0.767
	(0.114)	(0.194)
Employed	1.000	1.000
	(.)	(.)
Self-Employed	1.298	1.639
	(0.481)	(0.462)
Unemployed	0.708	0.984
	(0.239)	(0.353)
Other	0.496	0.615
	(0.210)	(0.367)
Migrant background		
migrant=0	1.000	1.000
	(.)	(.)

migrant=1	1.262	1.269
	(0.259)	(0.269)
Parity		
parity=0	1.000	1.000
	(.)	(.)
parity=1	0.983	1.086
	(0.207)	(0.234)
parity=2	0.129 ***	0.125 ***
	(0.031)	(0.033)
parity=3	0.059 ***	0.068 ***
	(0.032)	(0.038)
Age		
age	3.382 ***	2.342 ***
	(0.413)	(0.254)
age # age	0.980 ***	0.987 ***
	(0.002)	(0.002)
Cohabitation status		
cohab=0	1.000	1.000
	(.)	(.)
cohab=1	2.660 ***	3.661 ***
	(0.401)	(0.615)
Education level		
Primary/Lower-secondary education	0.596	0.732
	(0.214)	(0.252)
Upper-secondary education	0.572 **	0.638 *
	(0.103)	(0.116)
Post-secondary education	0.726	0.735
	(0.135)	(0.148)
Tertiary education	1.000	1.000
	(.)	(.)
Missing	0.418	3.022
	(0.279)	(1.989)
Household income		
4,999 € or less	0.288	0.521
	(0.184)	(0.270)
5,000 to 9,999 €	0.821	0.457
	(0.356)	(0.241)
10,000 to 19,999 €	0.732	0.654

	(0.159)	(0.173)
20,000 to 39,999 €	1.000	1.000
	(.)	(.)
40,000 to 59,999 €	0.834	0.972
	(0.169)	(0.195)
60,000 to 79,999 €	0.587 *	0.426 **
	(0.130)	(0.111)
80,000 to 99,999 €	0.712	0.517 *
	(0.203)	(0.154)
100,000 € or more	0.494 *	0.454 *
	(0.159)	(0.156)
Missing	1.502	0.252
	(1.013)	(0.232)
N	2303.000	1876.000

*Exponentiated coefficients. * for p<.05, ** for p<.01, and *** for p<.001.*

Standard errors in parenthesis.

12.1.2. Model 2: Full Model Results in Odds Ratios

Variables	*Model 2: Female*	*Model 2: Male*
Likelihood of Job Loss		
Unlikely	1.000	1.000
	(.)	(.)
Unsure	0.816	1.221
	(0.196)	(0.351)
Likely	0.681	0.398 *
	(0.307)	(0.185)
Missing	0.551 ***	0.766
	(0.098)	(0.166)
Migrant background		
migrant=0	1.000	1.000
	(.)	(.)
migrant=1	1.283	1.293
	(0.263)	(0.275)
Parity		

parity=0	1.000	1.000
	(.)	(.)
parity=1	1.003	1.060
	(0.210)	(0.230)
parity=2	0.128 ***	0.125 ***
	(0.031)	(0.033)
parity=3	0.061 ***	0.069 ***
	(0.033)	(0.039)
Cohabitation status		
cohab=0	1.000	1.000
	(.)	(.)
cohab=1	2.635 ***	3.763 ***
	(0.396)	(0.633)
Age		
age	3.379 ***	2.346 ***
	(0.404)	(0.252)
age # age	0.980 ***	0.987 ***
	(0.002)	(0.002)
Education level		
Primary/Lower-secondary education	0.610	0.739
	(0.219)	(0.254)
Upper-secondary education	0.578 **	0.648 *
	(0.103)	(0.117)
Post-secondary education	0.730	0.731
	(0.136)	(0.147)
Tertiary education	1.000	1.000
	(.)	(.)
Missing	0.446	2.912
	(0.294)	(1.909)
Household income		
4,999 € or less	0.311	0.610
	(0.195)	(0.316)
5,000 to 9,999 €	0.840	0.487
	(0.364)	(0.254)
10,000 to 19,999 €	0.763	0.725
	(0.165)	(0.194)
20,000 to 39,999 €	1.000	1.000
	(.)	(.)

40,000 to 59,999 €	0.828	0.984
	(0.168)	(0.198)
60,000 to 79,999 €	0.579 *	0.417 ***
	(0.129)	(0.109)
80,000 to 99,999 €	0.706	0.524 *
	(0.202)	(0.156)
100,000 € or more	0.517 *	0.455 *
	(0.166)	(0.158)
Missing	1.502	0.284
	(1.009)	(0.260)
N	2303.000	1876.000

*Exponentiated coefficients. * for p<.05, ** for p<.01, and *** for p<.001.*
Standard errors in parenthesis.

12.1.3. Model 3: Full Model Results in Odds Ratios

Variables	*Model 3: Female*	*Model 3: Male*
Activity status		
In education or training	0.543 **	0.789
	(0.114)	(0.215)
Employed (ref.)	1.000	1.000
	(.)	(.)
Self-Employed	1.603	1.683
	(0.649)	(0.501)
Unemployed	0.553	0.729
	(0.229)	(0.314)
Other	0.517	
	(0.261)	
Migrant background		
migrant=0 (ref.)	1.000	1.000
	(.)	(.)
migrant=1	1.174	1.230
	(0.287)	(0.299)
Interaction		

In education or training # migrant=0	1.000	1.000
	(.)	(.)
In education or training # migrant=1	1.532	0.782
	(0.774)	(0.465)
Employed # migrant=0	1.000	1.000
	(.)	(.)
Employed # migrant=1	1.000	1.000
	(.)	(.)
Self-Employed # migrant=0	1.000	1.000
	(.)	(.)
Self-Employed # migrant=1	0.321	0.795
	(0.325)	(0.708)
Unemployed # migrant=0	1.000	1.000
	(.)	(.)
Unemployed # migrant=1	2.386	2.803
	(1.747)	(2.247)
Other # migrant=0	1.000	
	(.)	
Other # migrant=1	0.940	
	(0.845)	
Parity		
parity=0 (ref.)	1.000	1.000
	(.)	(.)
parity=1	0.978	1.069
	(0.206)	(0.231)
parity=2	0.127 ***	0.125 ***
	(0.031)	(0.033)
parity=3	0.057 ***	0.062 ***
	(0.031)	(0.036)
Age		
age	3.401 ***	2.360 ***
	(0.418)	(0.258)
age # age	0.980 ***	0.987 ***
	(0.002)	(0.002)
Cohabitation status		

	cohab=0 (ref.)	1.000	1.000
		(.)	(.)
	cohab=1	2.672 ***	3.517 ***
		(0.404)	(0.594)
Education level			
	Primary/Lower-secondary education	0.591	0.846
		(0.214)	(0.295)
	Upper-secondary education	0.579 **	0.625 **
		(0.104)	(0.114)
	Post-secondary education	0.733	0.750
		(0.137)	(0.152)
	Tertiary education (ref.)	1.000	1.000
		(.)	(.)
	Missing	0.381	4.100 *
		(0.252)	(2.900)
Household income			
	4,999 € or less	0.249 *	0.511
		(0.165)	(0.268)
	5,000 to 9,999 €	0.799	0.447
		(0.351)	(0.247)
	10,000 to 19,999 €	0.743	0.678
		(0.162)	(0.180)
	20,000 to 39,999 € (ref.)	1.000	1.000
		(.)	(.)
	40,000 to 59,999 €	0.845	0.957
		(0.172)	(0.193)
	60,000 to 79,999 €	0.602 *	0.430 **
		(0.134)	(0.113)
	80,000 to 99,999 €	0.732	0.485 *
		(0.210)	(0.148)
	100,000 € or more	0.504 *	0.423 *
		(0.163)	(0.150)
	Missing	1.506	0.184
		(1.017)	(0.176)

N	2303.000	1837.000

*Exponentiated coefficients. * for p<.05, ** for p<.01, and *** for p<.001. Standard errors in parenthesis.*

12.1.4. Model 3: Average Marginal Effects

	Model 3: Female	*Model 3: Male*
Migrant=1		
In education or training	0.059	-0.003
	(0.050)	(0.043)
Employed	0.017	0.024
	(0.025)	(0.029)
Self-Employed	-0.087	-0.002
	(0.079)	(0.092)
Unemployed	0.112	0.155
	(0.080)	(0.110)
Other	0.008	
	(0.075)	
N	2303.000	1837.000

*AMEs in reference to Migrant=0 (Swedish-born). * for p<.05, ** for p<.01, and *** for p<.001. Standard errors in parenthesis.*

12.1.5. Model 4: Full Model Results in Odds Ratios

Variables		*Model 4: Female*	*Model 4: Male*
Likelihood of Job Loss			
	Unlikely	1.000	1.000
		(.)	(.)
	Unsure	0.952	0.992

		(0.259)	(0.324)
	Likely	0.490	0.257 *
		(0.254)	(0.153)
Migrant background			
	migrant=0 (ref.)	1.000	1.000
		(.)	(.)
	migrant=1	1.303	1.048
		(0.361)	(0.279)
Interaction			
	Unlikely # migrant=0	1.000	1.000
		(.)	(.)
	Unlikely # migrant=1	1.000	1.000
		(.)	(.)
	Unsure # migrant=0	1.000	1.000
		(.)	(.)
	Unsure # migrant=1	0.541	2.158
		(0.324)	(1.534)
	Likely # migrant=0	1.000	1.000
		(.)	(.)
	Likely # migrant=1	5.566	2.913
		(6.668)	(2.807)
Parity			
	parity=0 (ref.)	1.000	1.000
		(.)	(.)
	parity=1	0.888	1.080
		(0.211)	(0.242)
	parity=2	0.121 ***	0.108 ***
		(0.032)	(0.030)
	parity=3	0.044 ***	0.055 ***
		(0.028)	(0.035)
Age			
	age	3.662 ***	2.316 ***
		(0.585)	(0.303)
	age # age	0.979 ***	0.987 ***

Cohabitation status			
	cohab=0 (ref.)	1.000	1.000
		(.)	(.)
	cohab=1	2.496 ***	3.136 ***
		(0.450)	(0.588)
Education level			
	Primary/Lower-secondary education	0.402	0.783
		(0.209)	(0.327)
	Upper-secondary education	0.590 *	0.675 *
		(0.123)	(0.132)
	Post-secondary education	0.975	0.801
		(0.214)	(0.178)
	Tertiary education (ref.)	1.000	1.000
		(.)	(.)
	Missing	0.322	3.406
		(0.310)	(3.074)
Household income			
	4,999 € or less	0.740	1.196
		(0.688)	(0.738)
	5,000 to 9,999 €	1.331	0.874
		(0.925)	(0.683)
	10,000 to 19,999 €	0.775	0.925
		(0.224)	(0.314)
	20,000 to 39,999 € (ref.)	1.000	1.000
		(.)	(.)
	40,000 to 59,999 €	0.932	1.020
		(0.216)	(0.221)
	60,000 to 79,999 €	0.756	0.533 *
		(0.191)	(0.148)
	80,000 to 99,999 €	0.961	0.579
		(0.318)	(0.184)
	100,000 € or more	0.695	0.625
		(0.255)	(0.235)
	Missing	1.589	0.341
		(1.386)	(0.391)

N	1661.000	1445.000

*Exponentiated coefficients. * for p<.05, ** for p<.01, and *** for p<.001. Standard errors in parenthesis.*

12.1.6. Model 4: Average Marginal Effects

		Model 1: Female	*Model 1: Male*
Migrant=1			
	Unlikely	0.026	0.005
		(0.027)	(0.030)
	Unsure	-0.047	0.108
		(0.073)	(0.093)
	Likely	0.239	0.122
		(0.155)	(0.110)
N		1661.000	1445.000

*AMEs in reference to Migrant=0 (Swedish-born). * for p<.05, ** for p<.01, and *** for p<.001. Standard errors in parenthesis.*

12.1.7. Model 5: Full Model Results in Odds Ratios

Variables		*Model 5: Female*
Activity status		
	In education or training	0.974
		(0.727)
	Employed (ref.)	1.000
		(.)
	Self-Employed	0.536
		(0.948)
	Unemployed	0.671

	(0.612)
Other	0.258
	(0.362)
Migrant background	
Migrant, newly arrived (ref.)	1.000
	(.)
Migrant, arrived 5+ years ago	1.040
	(0.596)
Interaction	
In education or training # Migrant, newl	1.000
	(.)
In education or training # Migrant, arri	0.170
	(0.198)
Employed # Migrant, newly arrived	1.000
	(.)
Employed # Migrant, arrived 5+ years ago	1.000
	(.)
Self-Employed # Migrant, newly arrived	1.000
	(.)
Self-Employed # Migrant, arrived 5+ year	0.493
	(1.088)
Unemployed # Migrant, newly arrived	1.000
	(.)
Unemployed # Migrant, arrived 5+ years a	0.678
	(0.855)
Other # Migrant, newly arrived	1.000
	(.)
Other # Migrant, arrived 5+ years ago	3.065
	(5.493)
Parity	
parity=0 (ref.)	1.000
	(.)
parity=1	1.174
	(0.589)

	parity=2	0.082 **
		(0.063)
	parity=3	0.353
		(0.299)
Age		
	age	3.093 ***
		(0.979)
	age # age	0.982 ***
		(0.005)
Cohabitation status		
	cohab=0 (ref.)	1.000
		(.)
	cohab=1	1.780
		(0.778)
Education level		
	Primary/Lower-secondary education	0.279
		(0.225)
	Upper-secondary education	0.552
		(0.358)
	Post-secondary education	0.383
		(0.247)
	Tertiary education (ref.)	1.000
		(.)
	Missing	0.327
		(0.278)
Household income		
	Low income	1.173
		(0.612)
	Middle income	1.000
		(.)
	High income	0.247 **
		(0.132)
	Missing	1.840
		(1.996)
Region of origin		

Western countries	1.000
	(.)
Eastern European countries	1.050
	(0.529)
Middle Eastern/ North African countries	1.820
	(1.190)
Other non-European countries	4.487 **
	(2.404)
N	313

*Exponentiated coefficients. * for p<.05, ** for p<.01, and *** for p<.001. Standard errors in parenthesis.*

12.1.8. Model 5: Average Marginal Effects

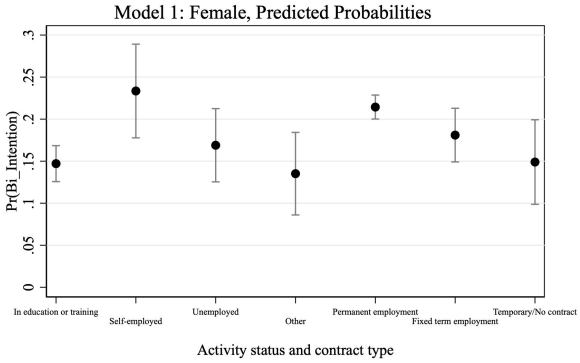
	Model 5: Female
Migrant, duration of stay >5 years	
In education or training	-0.184
	(0.106)
Employed	0.005
	(0.065)
Self-Employed	-0.041
	(0.134)
Unemployed	-0.035
	(0.116)
Other	0.107
	(0.147)
N	313.000

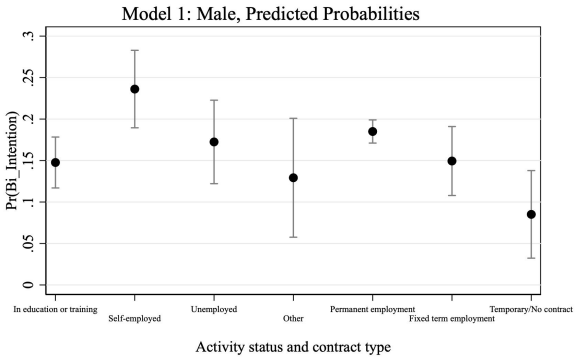
*AMEs in reference to Migrant=0 (Swedish-born). * for p<.05, ** for p<.01, and *** for p<.001.*

Standard errors in parenthesis.

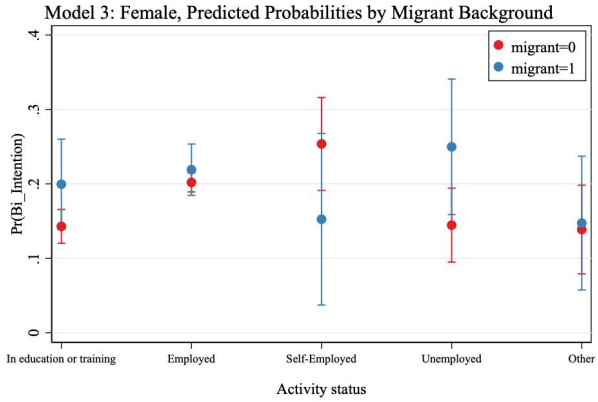
12.2. Additional Results as Plotted Predicted Probabilities and AMEs

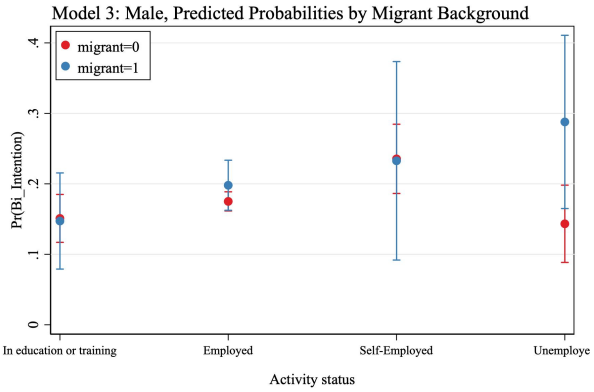
12.2.1. Model 1: Plotted Predicted Probabilities with Contract Types



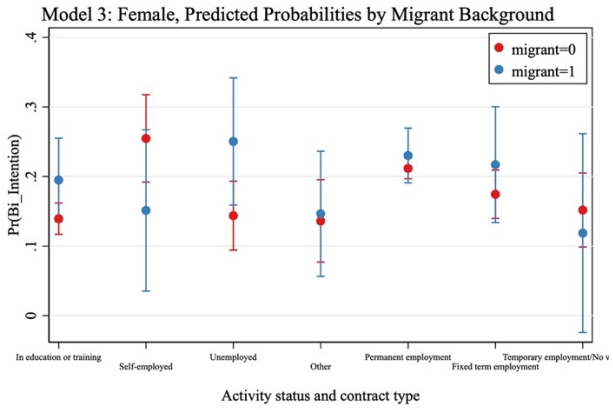


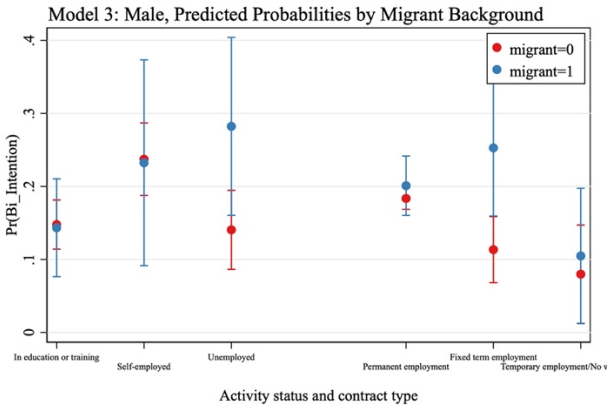
12.2.2. Model 3: Plotted Predicted Probabilities



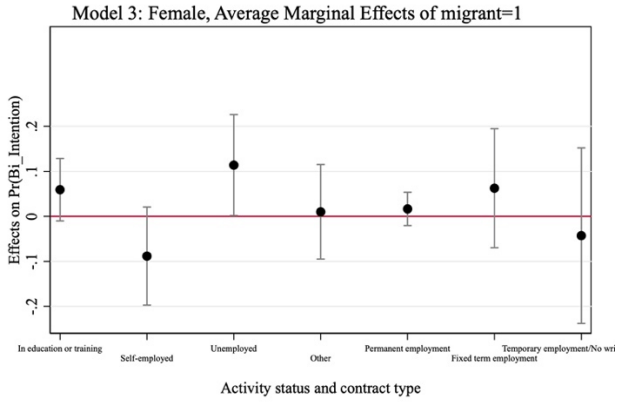


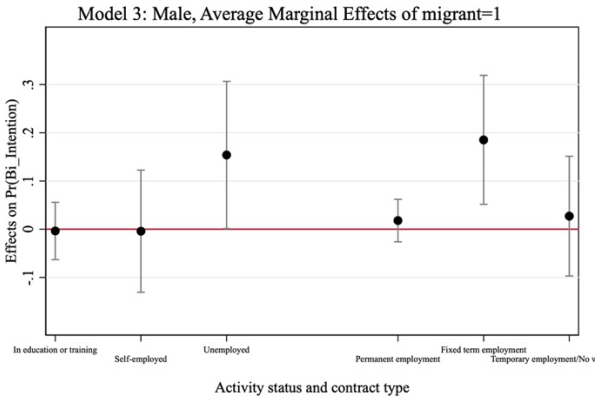
12.2.3. Model 3: Plotted Predicted Probabilities with Contract Types



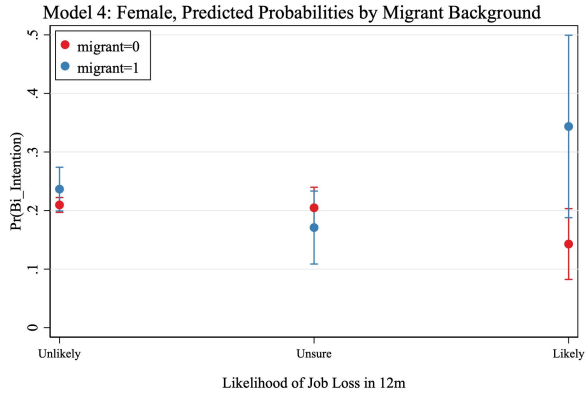


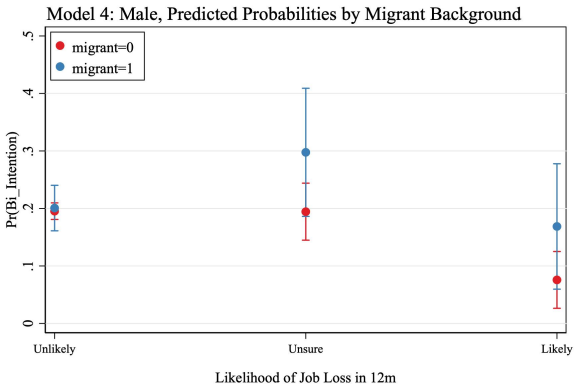
12.2.4. Model 3: Plotted Average Marginal Effects with Contract Types



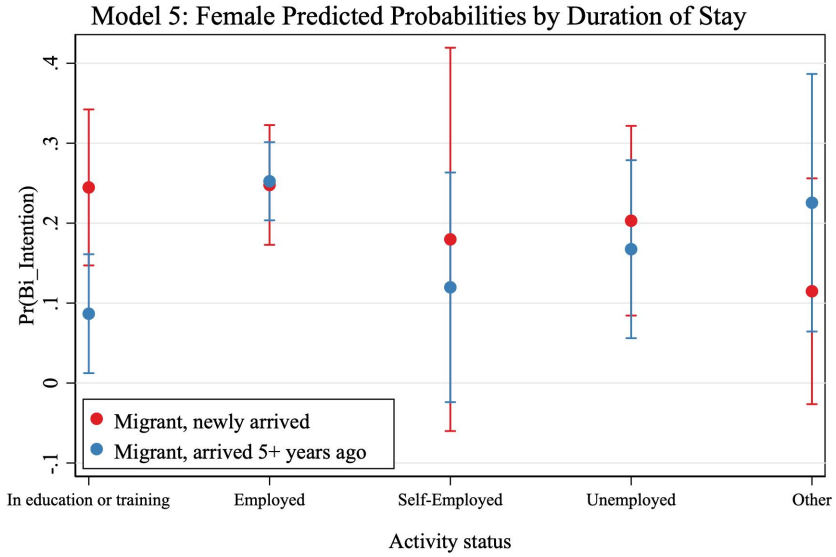


12.2.5. Model 4: Plotted Predicted Probabilities





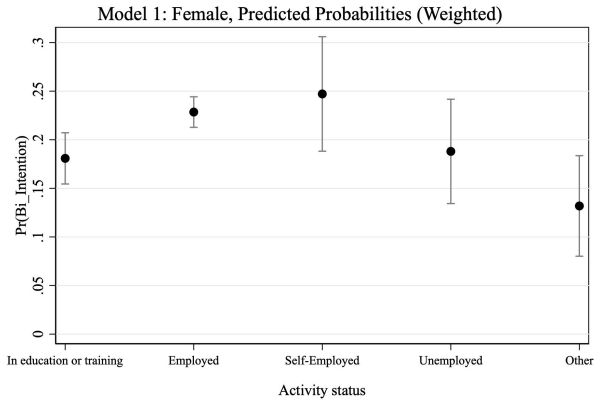
12.2.6. Model 5: Plotted Predicted Probabilities

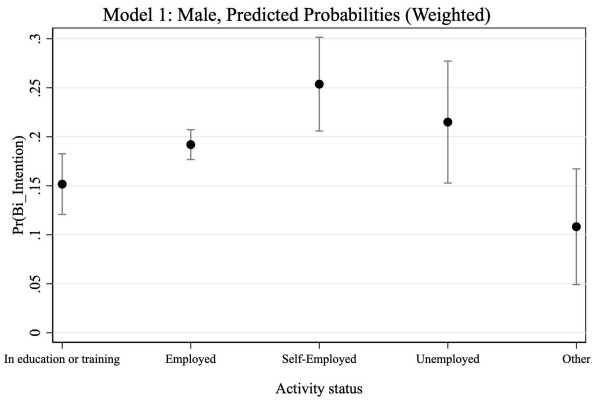


12.3. Robustness Checks: Plotted Predicted Probabilities and AMEs

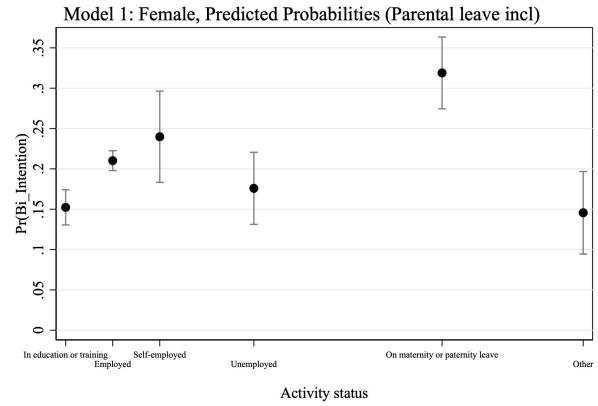
12.3.1. Model 1: Robustness Checks

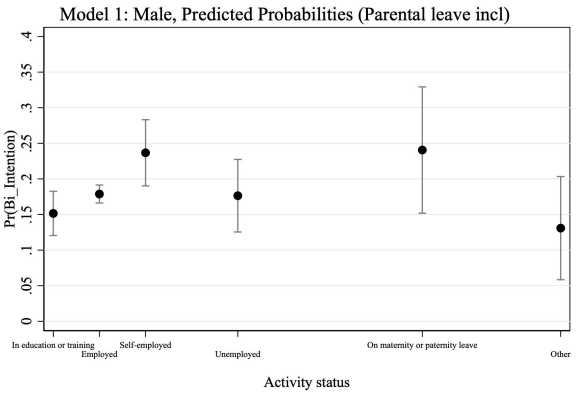
Weighted:



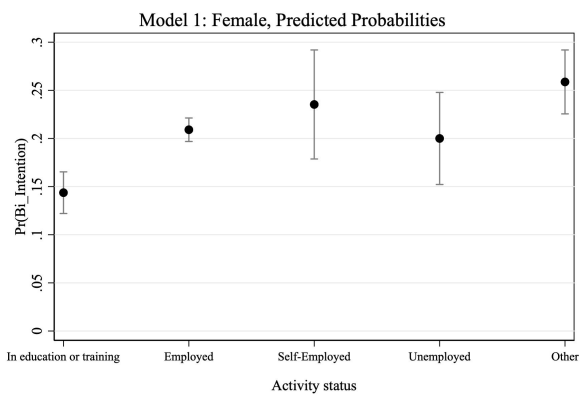


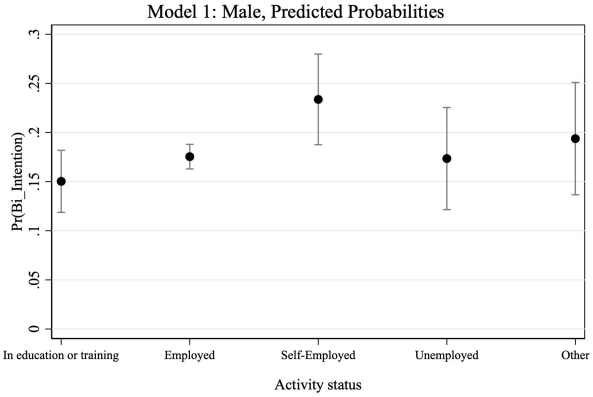
With parental leave category included:



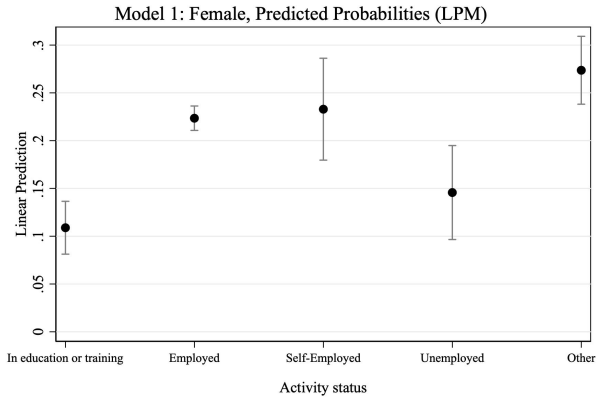


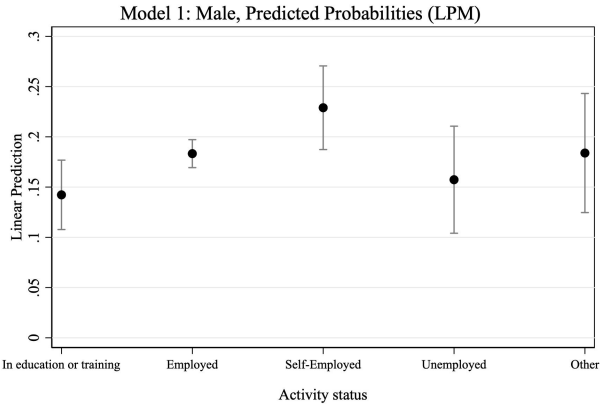
Complete case analysis, no missing values:



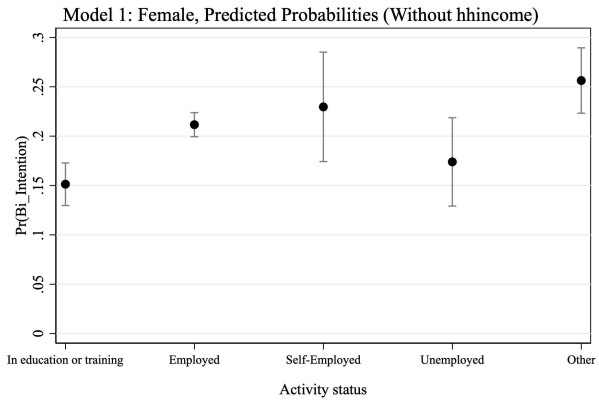


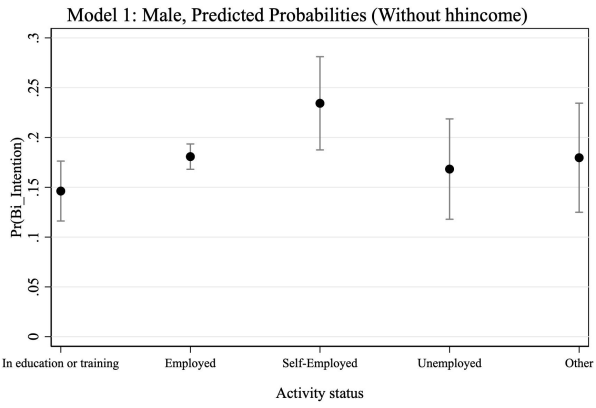
LPM:





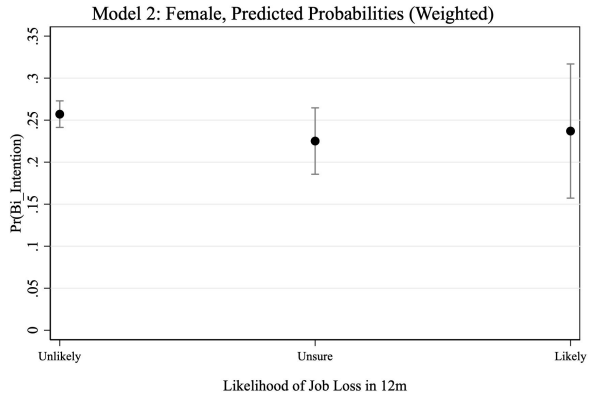
Without household income variable:

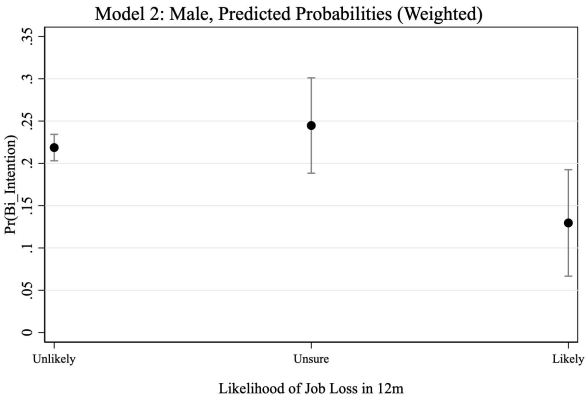




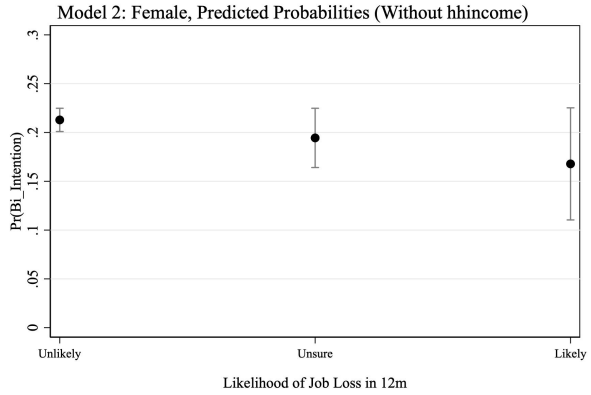
12.3.2. Model 2: Robustness checks

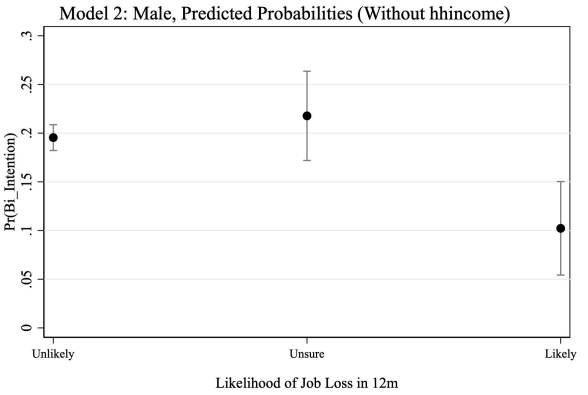
Weighted:



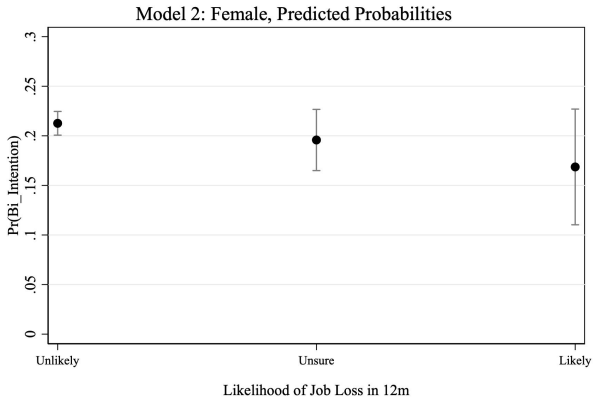


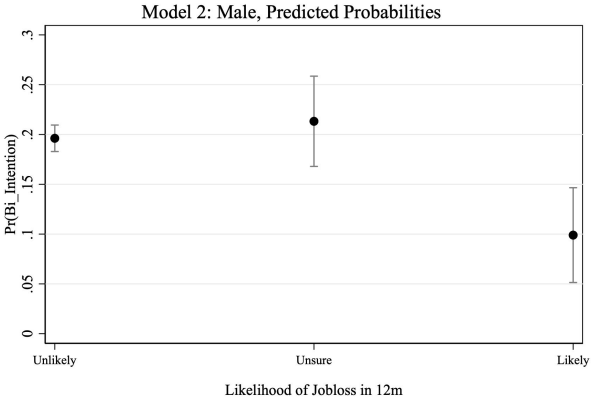
Without household income variable:

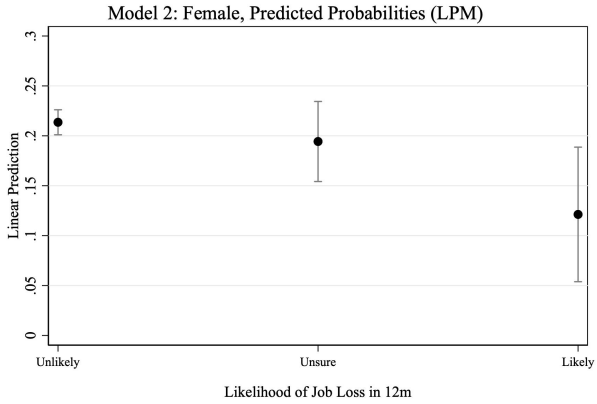


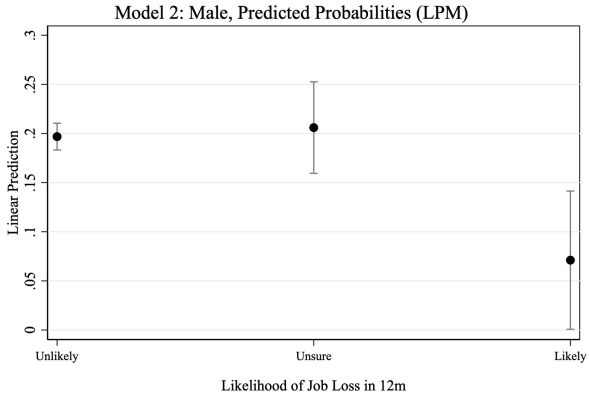


Missing values dropped:



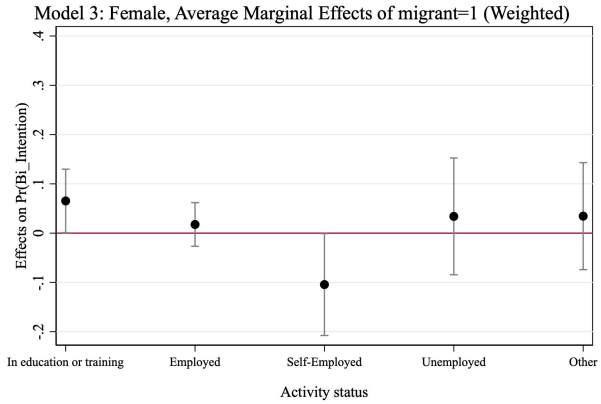


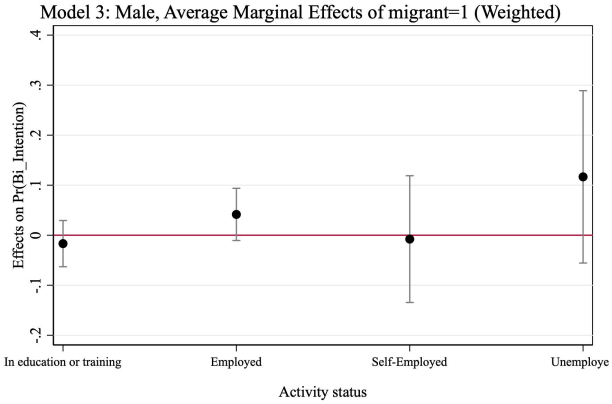




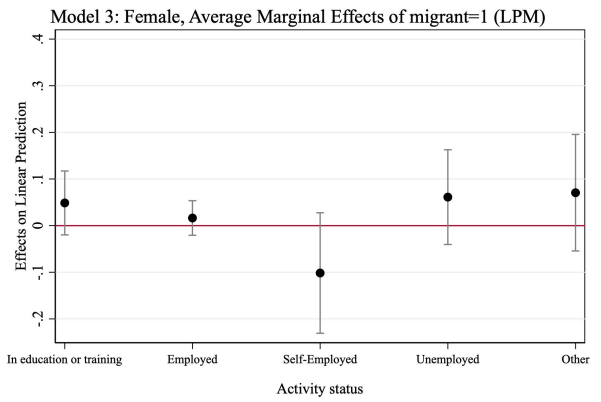
12.3.3. Model 3: Robustness checks

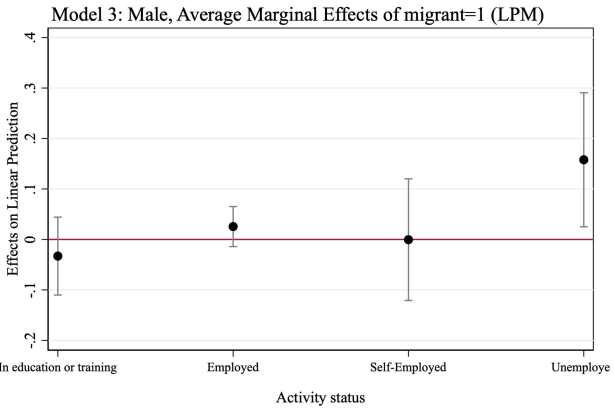
Weighted:



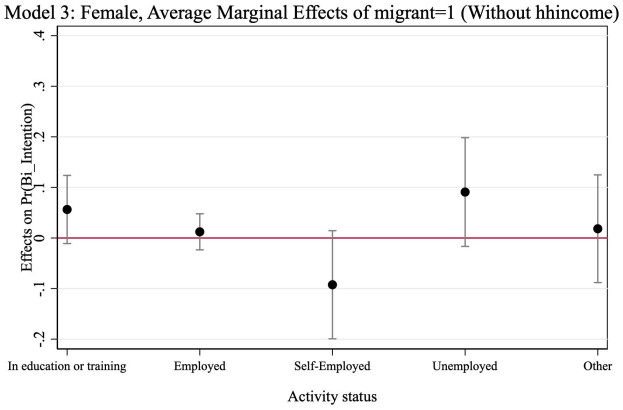


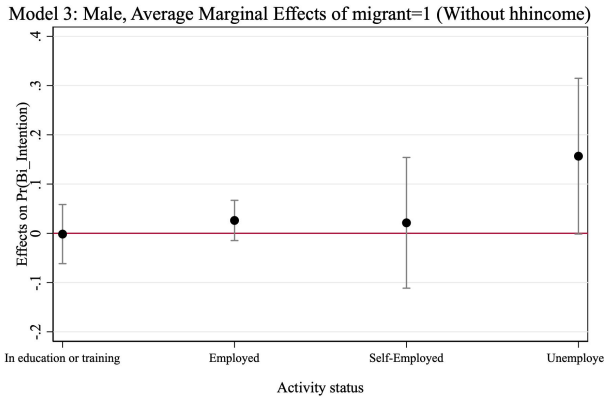
LPM:



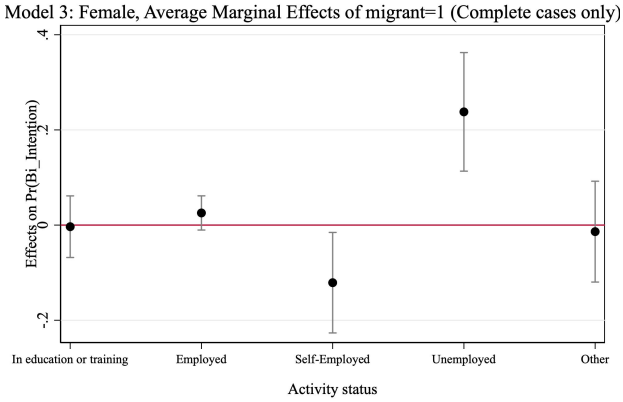


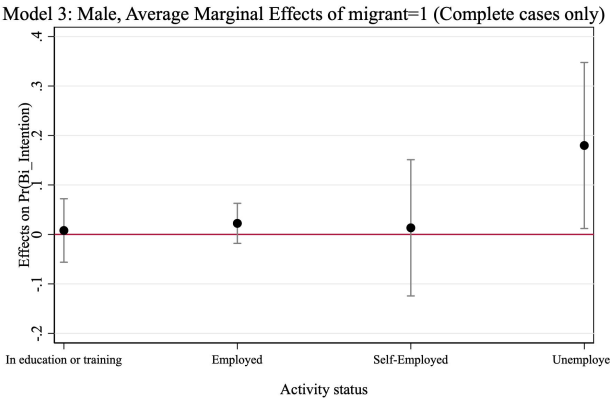
Without household income variable:



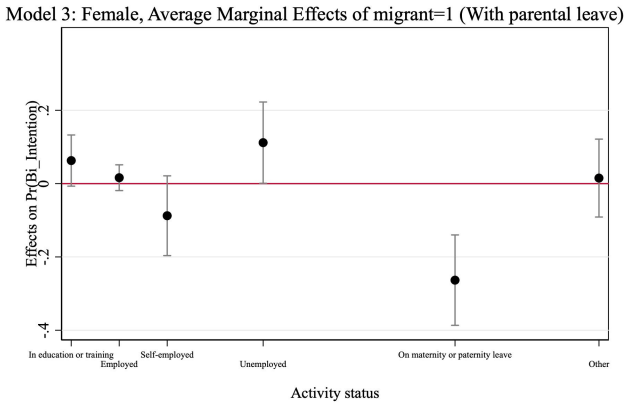


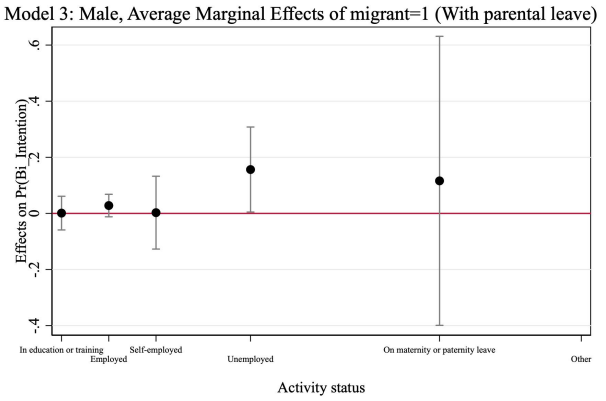
Complete case analysis, no missing values:





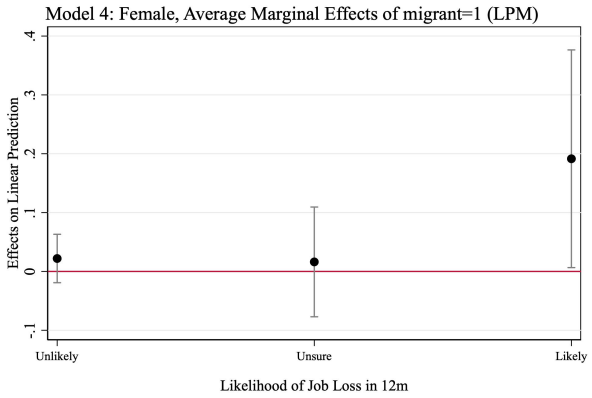
With parental leave category included:

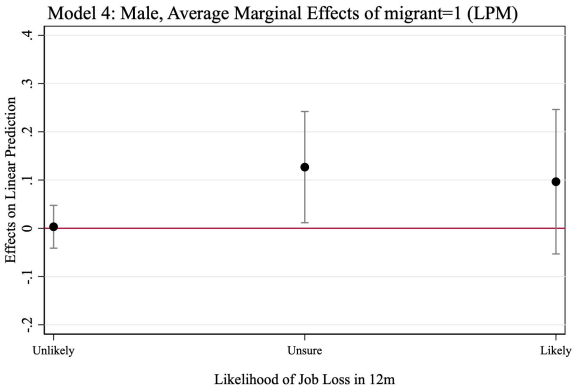




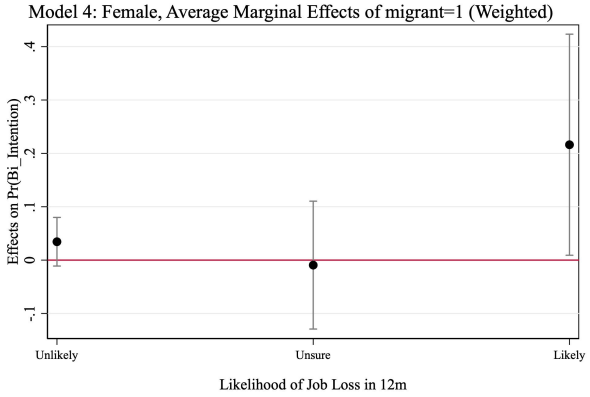
12.3.4. Model 4: Robustness checks

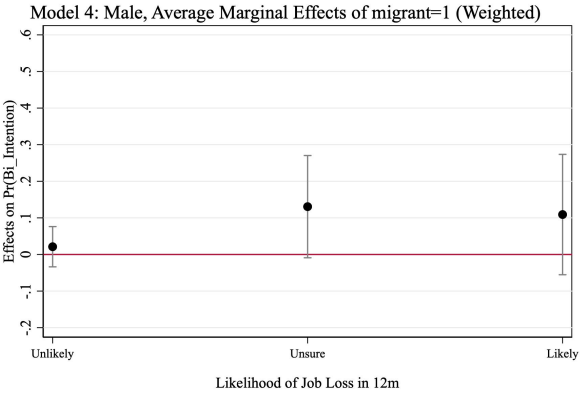
LPM:



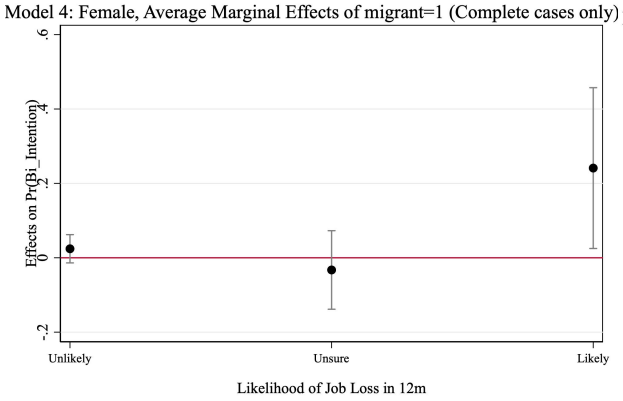


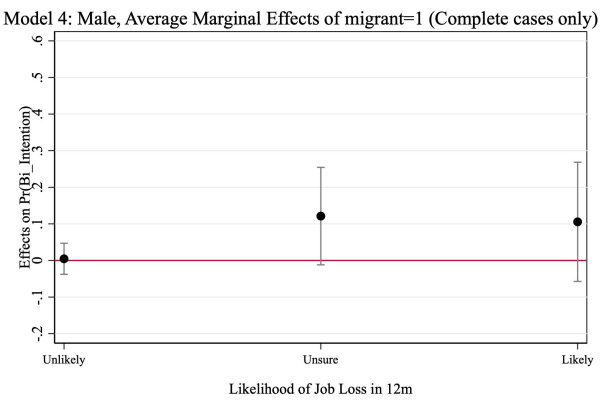
Weighted:



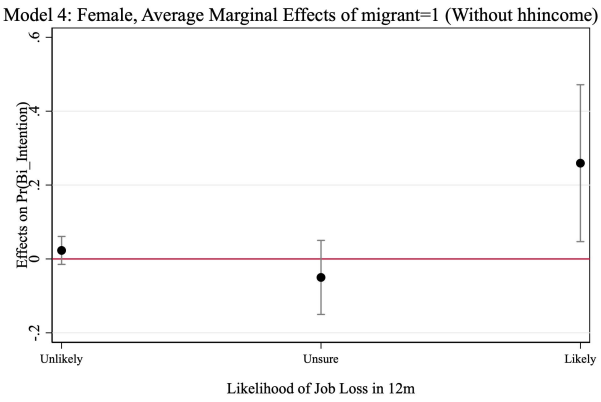


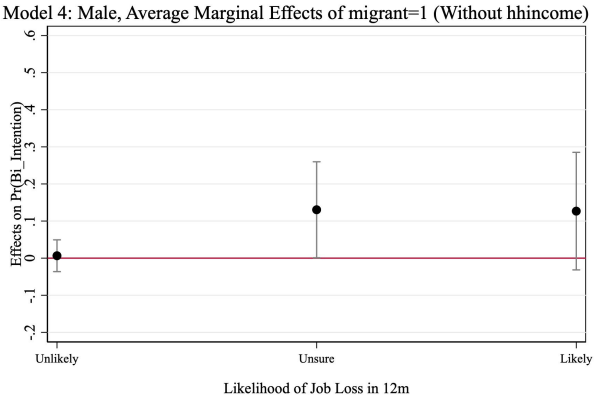
Complete case analysis, no missing values:





Without household income variable:

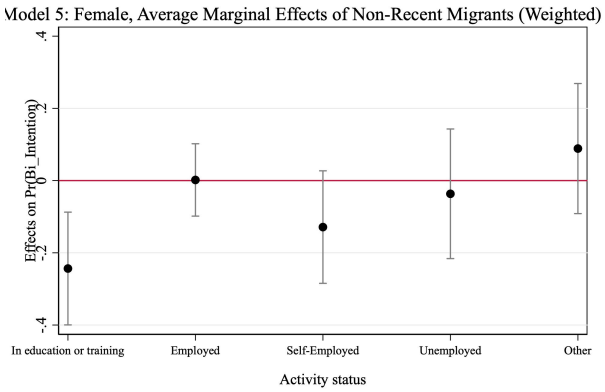


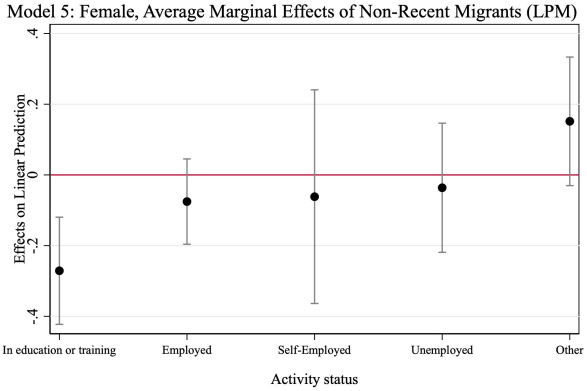


12.3.5. Model 5: Robustness checks

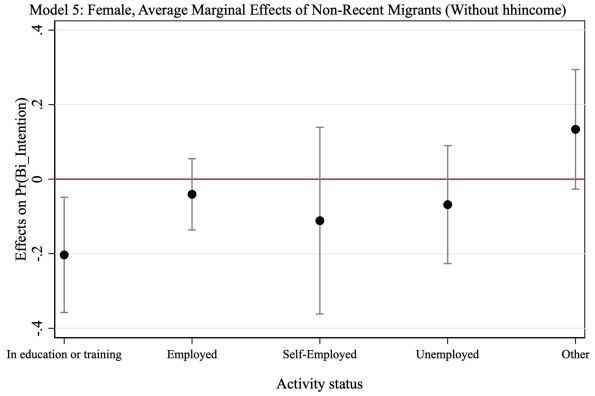
Weighted:

LPM:





Without household income variable:



With parental leave category included: