



Łódź, 23 luty 2022 r.

**WYDZIAŁ
EKONOMICZNO-
-SOCJOLOGICZNY**

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Skrócona recenzja rozprawy doktorskiej¹:

“Social Norms and Women’s Labor Force Participation: Evidence from Pakistan”. Rozprawa napisana została przez panią Mudassirę Sarfraz pod kierunkiem naukowym prof. dr hab. Joanny Tyrowicz, Wydział Zarządzania, Uniwersytet Warszawski.

Informacje ogólne

Praca doktorska analizuje bardzo ważny temat związany z uczestnictwem kobiet w rynku pracy i jego powiązaniem z normami społecznymi. Temat ten jest szczególnie ważny w krajach, w których od dawna tradycyjna rola kobiet jest związana z wykonywaniem prac domowych, a nie pracy zarobkowej poza domem. Jednym z tych krajów jest Pakistan, który jest przykładem przedstawionym w niniejszej pracy doktorskiej.

Moim zdaniem związek między tematem badań a wyborem kraju jest dobry. Pakistan jest jednym z najludniejszych krajów świata i jednym z krajów o długiej tradycyjnej roli kobiet w społeczeństwie, przechodzącym jednak proces modernizacji. To także kraj borykający się ze szczególnie dotkliwymi skutkami zmian klimatycznych. Warto podkreślić, że badania podjęte w tej pracy są ważne nie tylko z punktu widzenia ekonomicznego, ale prezentują również ogromną wiedzę na temat socjologicznych aspektów funkcjonowania gospodarstw domowych w Pakistanie.

Cel pracy:

Główne pytanie rozprawy dotyczy relacji między uczestnictwem kobiet w rynku pracy a normami społecznymi w Pakistanie. W szczególności Autorka podejmuje próbę odpowiedzi na pytanie: czy normy społeczne wpływają na decyzje dotyczące uczestnictwa kobiet w rynku pracy, czy uczestnictwo kobiet w rynku pracy wpływa na zmianę norm społecznych.

¹ Pełna wersja recenzji pracy doktorskiej jest w języku angielskim. Polska wersja zawiera tylko najważniejsze informacje i konkluzje.

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Struktura pracy

Praca składa się z sześciu rozdziałów. Pierwszym z nich jest wprowadzenie. Rozdział drugi zawiera przegląd literatury. Rozdział trzeci przedstawia wykorzystane w pracy podejście empiryczne. Rozdział czwarty omawia wykorzystane dane i operacjonalizację zmiennych. Rozdział piąty przedstawia wyniki analiz empirycznych. Wnioski i implikacje dla polityki rynku pracy przedstawiono w rozdziale szóstym. Struktura pracy jest poprawna i przejrzysta.

Ogólna opinia na temat pracy doktorskiej

Moja ogólna opinia na temat pracy doktorskiej jest bardzo dobra. Uważam, że recenzowana praca doktorska jest bardzo ciekawa i nowatorska. Przeczytałam ją z wielką przyjemnością. Autorka wykazała się bardzo dobrą znajomością literatury światowej. Jestem pod ogromnym wrażeniem ilości cytowanej i komentowanej w pracy literatury. Autorka wykazała się bardzo dobrą znajomością realiów gospodarki pakistańskiej, jej rynku pracy oraz aspektów społecznych. Autorka wykazała się również bardzo dobrą znajomością metod badawczych. Wszystko to umożliwiło jej przeprowadzenie dwóch bardzo dobrych badań empirycznych, wyjaśnienie uzyskanych wyników oraz sformułowanie implikacji dla polityki rynku pracy i zaleceń do dalszych analiz.

Wartość dodaną pracy doktorskiej oceniam bardzo wysoko. W szczególności: (1) Jest ona kompleksowym źródłem wiedzy o gospodarce Pakistanu, jej rynku pracy i kwestiach społecznych; (2) Zawiera dogłębny przegląd literatury na temat wzajemnych powiązań pomiędzy uczestnictwem kobiet w rynku pracy, obowiązującymi normami społecznymi i czynnikami pogodowymi; (3) Autorka zbudowała szereg wskaźników ekonomicznych i społecznych wykorzystywanych przez nią w analizach empirycznych;

(4) Autorka dokonała również istotnych korekt w istniejących bazach danych; (5) Autorka dokonała weryfikacji powiązań przyczynowych między uczestnictwem kobiet w rynku pracy a obowiązującymi normami społecznymi przy użyciu różnych metod ekonometrycznych i weryfikację odporności wyników; (6) Na podstawie przeprowadzonych analiz Autorka zaproponowała ważne wnioski i zalecenia dotyczące polityki rynku pracy.

W głównej recenzji (napisanej w języku angielskim) znajduje się szczegółowa lista moich komentarzy i sugestii. Nie zmieniają one mojej ogólnej, bardzo dobrej opinii o pracy. Część z nich może zostać wykorzystana jako dodatkowy, zewnętrzny zestaw sugestii, w jaki sposób ulepszyć przeprowadzone badania. Część z nich to moje pytania dotyczące kwestii, które moim zdaniem powinny zostać lepiej wyjaśnione lub poprawione. Niemniej jednak, po uwzględnieniu przedstawionych sugestii, rekomenduję opublikowanie wyników obu badań w dobrych międzynarodowych czasopismach.

Poniżej krótkie podsumowanie najważniejszych uwag i sugestii:

- Rozdział 1 powinien, moim zdaniem, zostać uzupełniony o przegląd danych statystycznych dotyczących gospodarki pakistańskiej, najważniejszych wskaźników dotyczących rynku pracy, oraz ich zróżnicowania w przekroju płci, grup wiekowych i regionów.
- Teoretyczne podstawy przedstawione w Rozdziale 1 powinny moim zdaniem zostać rozszerzone i zawierać omówienie wszystkich wykorzystywanych w pracy teorii.
- W Rozdziale 2 przy omawianiu dotychczasowych badań, warto byłoby dodać krótki przegląd dotychczas wykorzystywanych w literaturze wskaźników norm społecznych wraz z omówieniem ich zalet i wad.
- Rozdział 4: Wykorzystywane w pracy wskaźniki konstruowane są na podstawie różnych podgrup (np. grupy kobiet w wieku 10 lat i starszych, w wieku 10-64 lata, w wieku 15-49). Wydaje mi się, że warto byłoby ujednoczyć podgrupy, tak, aby skonstruowane na ich podstawie wskaźniki (zmiennie objaśniane, jak i zmiennie objaśniające) dotyczyły tych samych

grup osób. Dotyczy to zarówno wskaźników uczestnictwa kobiet w rynku pracy i norm społecznych obliczanych na danych z PSLM, BISP, jak i też relacji liczby mężczyzn do liczby kobiet i wskaźnika narażenia na ekstremalne zjawiska pogodowe.

- Głębszego wyjaśnienia wymaga silne regionalne zróżnicowanie kluczowej dla analiz zmiennej dotyczącej relacji liczby mężczyzn do liczby kobiet i jej zmian w czasie.
- Moje wątpliwości budzi też sposób konstrukcji wskaźnika narażenia na ekstremalne zjawiska pogodowe i jego interpretacja.
- Rozdział 5: Moje wątpliwości budzi interpretacja uzyskanej w pierwszym badaniu dodatniej zależności pomiędzy relacją liczby mężczyzn do liczby kobiet a uczestnictwem kobiet w rynku pracy.
- Moje wątpliwości budzi również interpretacja uzyskanej w pierwszym badaniu dodatniej zależności pomiędzy wskaźnikiem narażenia na ekstremalne zjawiska pogodowe a relacją liczby mężczyzn do liczby kobiet.
- Moje wątpliwości budzi konstrukcja pierwszego modelu, w szczególności uwzględnienie po prawej stronie równania jednocześnie trzech zmiennych aproksymujących wskaźnik norm społecznych.
- Rozdział 6: W nawiązaniu do mojej uwagi dotyczącej interpretacji uzyskanych w pierwszym badaniu dodatnich zależności pomiędzy analizowanymi zmiennymi, nie do końca zgadzam się z przedstawionymi na ich podstawie wnioskami i rekomendacjami.
- Proszę o wskazanie, jakie Pani zdaniem działania powinny zostać podjęte przez rząd Pakistanu, aby poprawić obecną sytuację kobiet na rynku pracy. W jaki sposób uzyskane przez Panią wyniki mogą pomóc w przeprowadzeniu tych działań?

Konkluzja

Wziąwszy pod uwagę wymogi Ustawy o stopniach naukowych i tytule naukowym oraz o stopniach i tytule w dziedzinie sztuki stwierdzam, że przedstawiona do recenzji rozprawa jest opracowaniem naukowym stanowiącym oryginalne rozwiązanie problemu badawczego, wykazuje ogólną wiedzę teoretyczną Doktorantki w dyscyplinie ekonomia i finanse oraz potwierdza umiejętności Doktorantki w zakresie samodzielnego prowadzenia pracy naukowej. Na tej podstawie rekomenduję Radzie Naukowej Dyscypliny Ekonomia i Finanse wniosek o dopuszczenie rozprawy mgr Mudassiry Sarfraz do publicznej obrony.

23.02.2022 r.

Mehsandre
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Review of the Ph.D. thesis:

"Social Norms and Women's Labor Force Participation: Evidence from Pakistan" authored by Mudassira Sarfraz. The dissertation was written under the supervision of Prof. Joanna Tyrowicz, Faculty of Management, University of Warsaw, Poland.

General information

The thesis analyzes very important and relevant topic concerned with female labor force participation (further FLFP) and its linkages to social norms. The topic is particularly important in countries with long traditional role of women being attached to homework rather than to paid work outside. One of these countries is Pakistan which is the case illustrated in this Ph.D. thesis.

In my opinion the link between the research topic and the choice of country is good. Pakistan is one of the most populous countries on the world and one of the countries with long traditional role of women in the society, however undergoing the process of modernization. It is also the country facing particularly harsh consequences of climate change. It is worth to underline that the research undertaken in that thesis is important not only from the economic point of view, but it presents also huge knowledge on sociological aspects of households in Pakistan.

The aim of the thesis and research hypotheses:

The main question of the thesis concerns the relationship between LFP of women and the social norms in Pakistan, in particular: do social norms impact the LFP decisions of women or does the LFP of women changes the social norms?


According to the Author: "My purpose in this thesis is to verify empirical support for both these directions for the case of Pakistan. The research objective of this thesis is to establish and identify underlying causal mechanisms that link equitable gender role beliefs (EGRB) and women's labor force participation (LFP). The specific objectives of this research are as follows:

- To examine the causal effect of equitable gender role beliefs on women's LFP, and;
- To investigate the causal impact of women's LFP on equitable gender role beliefs."

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Following empirical hypotheses are formulated in the PH.D. thesis:

- H1: More equitable gender role beliefs cause an increase in LFP among women.
- H2: LFP among women causes gender role beliefs to become more equitable.

The structure of the thesis

The thesis consists of six chapters. The first one is the introduction. The second chapter contains review of the literature. Chapter three describes empirical strategy. Chapter four analyzes data and operationalization of the variables. Chapter five presents the results and empirical findings. Conclusions and policy implications are presented in chapter six. In my opinion the structure of the thesis is correct and clear.

Chapter 1 contains the introduction. It presents not only the aim, research hypothesis, but also some statistical data on Pakistani economy, theoretical background with description of the causality of the relationship between labor force of women and equitable gender role beliefs. Moreover, it provides the information how the research fills the gap in the literature, and therefore the relevance of the thesis.

The theoretical background mentioned in this chapter points to the neoclassical theory and modernization theory as two main theoretical explanations of women's LFP decisions. Both theories point out that the causality runs from social norms to LFP of women: LFP decisions are conditioned by equitable gender role beliefs. These theories are the base for the first empirical study done in the thesis. Moreover, the Author mentions the gender stratification theory which proposes that the causality runs from higher women's LFP to equitable gender role beliefs. This theory is the base for the second empirical study provided in the thesis.

Chapter 2 presents a comprehensive review of literature. It covers a wide range of topics: the relationship between social norms and women's LFP, the relationship between gender ratio and women's LFP, the link between migration and climate change, the relationship between cash transfer programs and LFP of women (with special attention to Benazir Income Support Program (BISP) in Pakistan), and finally the review of studies on determinants of LFP of women in Pakistan.

Chapter 3 presents information about empirical strategy used by the Author. This chapter presents econometric methodologies used for causal identification between LFP of women and EGRB. The Instrumental Variable (IV) method and the Regression Discontinuity Design (RDD) method are presented with details.

Chapter 4 presents information about data and their operationalization. The Author uses individual data from two databases: the Pakistan Social and Living Standard Measurement Survey (PSLM) and the Benazir Income Support Program (BISP). Moreover, data on natural disasters at the district level from the Emergency Events Database are used. All of them are large databases with detailed information provided.

In my opinion, the Author justified the choice of data used in the thesis in a very correct and convincing way. The Author not only explains the choice of these databases but also describes in detail their advantages and disadvantages.

Chapter 5 consists of two separate empirical studies. The first study aims to analyze the impact of the EGRB on LFP of women using the individual data from PSLM and district level data from the Emergency Events Database. In this study the FLFP is a function of gender ratio instrumented by the people's exposure to extreme weather events. In the second study the impact of increased FLFP on EGRB is studied. To mitigate the self-reporting bias, a measure of the coincidence of the husbands' and wives' answers is constructed and used as a dependent variable. The independent variable, FLFP,

is instrumented with the BISP official treatment status. Both empirical studies are carried and described with details. The results of both studies are extremely interesting.

Chapter 6 contains main conclusions resulting from both researches, policy implications of the results, contribution of the thesis to the literature, and limitations of the study and directions for future research.

Value added of the Ph.D. thesis. The thesis is very comprehensive and contains several innovations which lead to, in my opinion, very high value added of this research:

- It is a comprehensive source of knowledge about Pakistani economy, its labor markets, and social issues.
- It contains a deep review of the literature on the relation between FLFP and gender role beliefs, on the relation between gender ratio and FLFP, on the relation between extreme weather events, migration, gender ratio, and FLFP, and on the relation between cash transfers, FLFP and the EGRB.
- Several economic and social indicators have been constructed: the FLFP indicators created independently from the PSLM and BISP databases, two indicators of gender role beliefs constructed from PSLM data, the gender ratio indicator by cohorts and districts, the exposure on the extreme weather events indicator by cohorts and districts, and the measure of husband-wife gender norms coincidence index from the BISP data by matching the responses given by husbands and wives on six gender norms questions. The indicator of husband-wife gender norms coincidence is further used to construct an index of these matched responses through multiple correspondence analysis (MCA).
- The Author made also important improvements to the existing BISP data by replicating the poverty score using the BISP proxy means test (PMT) method and official weights by using the recent rounds of BISP to obtain the actual poverty score of the household based on current data on poverty covariates.
- The thesis contains a verification of the causal links between FLFP and EGRB using different econometric methodologies and several robustness checks. In particular the endogeneity problems in social norms and women's LFP have been deeply analyzed.
- Important conclusions and policy recommendation have been proposed.

The overall opinion

My general opinion on the thesis is very good. This research is very interesting and innovative. I have read the thesis with great pleasure. The Author proved a very good knowledge of the world literature; I am really impressed of the amount of literature cited and commented on in the thesis. The Author proved a very good knowledge of Pakistani economy, its labor market, and social aspects. The Author proved also a very good knowledge of research methods. All of these enabled her to conduct two very good research surveys, to explain the results obtained, and to formulate policy implications and recommendations for further analyses.

Below the list of my comments and suggestions is included. They do not change my general, very good opinion. Some of them should serve as an additional, external set of suggestions of how to improve the research. Some of them are my questions concerned with the issues which in my opinion should be clarified or corrected. Nevertheless, after taking into account the suggestions, I recommend to publish the results of both surveys in good international journals.



Comments, questions, and suggestions

I present the comments, questions, and suggestions chapter by chapter, as they appeared during the process of reading.

Introduction

Page 1: "The most crucial potential progress at the macro level is the prospect of higher economic growth because of higher productivity as women join the labor market...". In my opinion, there is a mistake in this sentence. The word "production" instead of "productivity" should be used. The overall productivity would increase in the case when women had higher productivity of men. The impact of higher LFP of women goes rather throughout higher total labor supply which translates to higher total production and higher incomes of households, and – as it is pointed by the Author – to the reduction of poverty.

Page 2, research hypotheses: Hypothesis H2 is formulated as: "LFP among women causes gender role beliefs to become more equitable". In my opinion it should be formulated as: "Higher LFP among women causes gender role beliefs to become more equitable".

Page 3 Figure 3.1¹. The figure presents the relation between GNI per capita in 2013 and female-male labor force participation ratio (unfortunately no information about the year is given) in several Asian economies (not "Worldwide" as it is stated in the figure's title). The figure is imported from the paper of Tanaka & Muzones, 2016. I would recommend to Author to take the data from one of the public databases (e.g. World Bank or United Nations database) and show this relation using more recent data. If more recent data are missing, an explanation should be provided in a footnote. Additionally, I would suggest using one source of data also while interpreting the results. In the current version the Author use different sources: "During this period of rapid economic growth, women's LFP has increased moderately: from 14% in 2001 to approximately 20% at the end of the 2010s (Pakistan Bureau of Statistics, 2018). (...) Pakistan is an outlier among developing countries regarding FLFP: it is the lowest among countries in the South Asian region (Tanaka & Muzones, 2016)."

Nevertheless, on page 3 the Author provides information that the FLFP in Pakistan is very low, much lower than in other countries with similar level of development ("Pakistan is an outlier among developing countries regarding FLFP: it is the lowest among countries in the South Asian region"). Could you try to explain why FLFP in Pakistan is much lower than in other, similar countries? What are the main factors that determine this exceptionally low ratio of FLFP in Pakistan? Is it due to much more strict social norms than in other, similar countries (are there any researches that compare the "strictness" of social norms across countries?). Or maybe some other factors play an important role? The decision whether to participate in labor market in the case of women with children may also depend on the family policies offered by the government. Are there any social or family policies in Pakistan? Especially those which can influence the decision of women to enter the labor market like paid maternity leaves, parental leaves, and additional cash support for mothers for staying at home with children and others? Such information would be helpful for the readers.

Page 3: The Author states that "women's LFP rate is higher in urban areas than in rural areas. (...) At the provincial level, FLFP ranges from 26.5% (Punjab), 12.1% (Sindh), 11.3% (KP), and 7.9% (Balochistan) (Pakistan Bureau of Statistics, 2018)." I would recommend showing the data in the form of table or figure, it would be easier to compare and interpret the differences between regions.

¹ There is a mistake in the numeration of figures in Chapter 1. Figures 3.1, 3.2 and 3.3. should be remunerated to 1.1, 1.2, and 1.3 respectively, in line with numeration of figures in subsequent chapters.

In my opinion it would be relevant for the readers to be provided with some basic statistical, official data on Pakistani economy and its labor market. A sub-chapter in the introduction or separate chapter containing the statistical data on Pakistani economy and its labor market should be (in my opinion) added. Firstly, this statistical review could contain main economic indicators as GDP, GDP growth rate, GDP per capita (in comparison maybe to the neighboring countries), inflation rate, structure of the GDP (share of employed in agriculture, industry, and services), and its changes in the last 20 years. Secondly, a table with main labor market indicators (total and by gender) could be presented and explained: unemployment rate, employment rate, and labor force participation rate, and its changes in the last 20 years. It would be also interesting to see the differences in FLFP by age, educational attainment, rural and urban areas, and types of households if possible. Thirdly, since regional dimension is of particular importance for the main results of the thesis, I would recommend showing the statistical data regarding regional differences in the main labor market indicators mentioned above, and the regional differences in employment structure by economic sectors. I think it could help in interpreting the results obtained in Chapter 5.

Moreover, a map with the administrative division of Pakistan and names of the provinces would be useful for the readers. On page 65-66 the Author states: "The surveys capture most of the districts on the eastern side, i.e., from the provinces of Punjab and Sindh." The map with names of the provinces would be helpful to see where those provinces are exactly located. Information about administrative units in Pakistan should be included in the introduction section (in a current version some information about the administrative division appear in Chapter 4, in footnote 7 on page 51).

Page 5-6: Theoretical background. In my opinion this part of the chapter, the review of the theoretical concepts, which are used as a background for empirical analyses, need to be extended. In the current version the Author describes some features of neoclassical theory of labor supply, Becker's marriage market hypothesis, and modernization theory. There is no information in this section about the stratification theory which in subsequent parts of the thesis is used as a background for empirical analyses in second survey. Moreover, in my opinion the theoretical aspects of migration on FLFP should also be described in this part of the chapter. To sum up, all the theoretical aspects of the relationship between FLFP and EGRB should be placed here, in this theoretical part of the thesis.

Page 6: "urbanization is also an indicator of modernization in society. In Pakistan, the urbanization rate is 3% per annum". In my opinion it should be: "the changes in urbanization rate equal to 3 p.p. per annum".

Page 9: "It is the largest unconditional cash transfer (UCT) program of the government of Pakistan" (...) A poverty score is used as a threshold for the households to be eligible for the BISP cash transfer". I am not sure whether I did understand correctly, but why the Author call the program "unconditional"?

Page 16, Relevance of the Thesis: I miss the information whether there is any similar research analyzing the mutual relationship between gender role beliefs and FLFP made for other countries. On page 35 the Author states: "It is observed that there is a shortage of literature on FLFP in Pakistan that explicitly explores the phenomenon of causal identification while examining FLFP." Are there some for other countries? If not, in my opinion a clear statement that this study is the first one that empirically tests the mutual relationship between FLFP and EGRB is needed.

Chapter 2.

The Author presents the results of several studies which investigated the link between social norms and women's LFP. For example Author states: "Empirical studies such as Fortin (2009) investigated the relationship between women's gender role attitudes and work decisions". It would be valuable to

compare how in different studies the social norms / gender role beliefs were measured. The information about different measures of social norms used in other empirical studies, their advantages and disadvantages, would help the readers to understand why those specific measures were taken into account in this thesis.

Chapter 3.

Page 39: A variable “exposure to extreme weather events” is an instrument for gender ratio as presented in equation 3.2. I would like to ask what are the other variables, captured by X_{it} , in equation 3.2.

Page 41: In equations 3.3 and 3.4. a set of control variables w_{it} is included. The same symbol suggests that in both equations the control set of variables is the same. If it is not true, different symbols should be used. Moreover, the same parameter δ appears in both equations; in my opinion two different parameters should be used. Parameter δ appears also in equation 3.1.

Small mistakes in the description of equations are found (page 41: instead of “Equation 4.4 is the second stage” it should be “Equation 3.4 is the second stage”; page 43: instead of “Where in equation 1”, it should be “Where in equation 3.6”).

Chapter 4.

Page 46: “this study has utilized four cross-sections of this survey, which are then pooled together to be used in the final analysis”. I miss the explanation why the cross-sections are pooled. If I understood well, it is because the set of households in PSLM survey is drawn randomly from the population and the samples differ between surveys. I think it should be explicitly explained in the text that it is not possible to create a panel that is why the three or four sample surveys are pooled.

Page 52: FLFP from the PSLM data are calculated taking into account women at the age of 10 and older (“female labor force participation is measured by combining two questions asked from the respondents who are ten years of age and older”). This indicator is used further by the Author to check the first hypothesis, i.e. the relation between EGRB and the FLFP. However, both “employment decision” and “permission to work” variables, which are used as control indicators, are calculated on the 15-49 samples of women (Page 54: “who in your household decides whether you can seek or remain paid employment?” and these respondents are all the females in a household who are between the age of 15 and 49”). Since the independent variable and control variables are calculated on a different samples of women, it would be maybe a good idea to adjust the data, taking into account only person 15-49 years old (I know that it was done in the robustness check, however, in my opinion, the main analysis should be proceeded on the synchronized sample).

Page 53: Table 4.5 presents summary on FLFP from PSLM data. It would be helpful to see also the differences in the FLFP indicator across districts, similarly, as it was presented in the case of extreme weather events (Figure 4.3) and gender ratio (Figure 4.5).

Page 53: I can see also some inconsistency in the BISP data “the BISP survey asks labor force participation questions from respondents 15 years of age and older”. But the questions on gender norms are answered by only ever-married women (“All ever-married women in the household answer these questions.” (...) “To construct the indicator of husband-wife gender norms coincidence, among all the women, only wives’ responses are considered”). Again I would suggest adjusting the data in such a way that both dependent and independent variables would be calculated on the same sample of women.

Maybe it would be a good idea to synchronize the data from PSLM and BISP and reduce both samples to the common features i.e. married women (and husbands in the case of BISP) of 15-49 years old?

You will conduct both researches on the comparative samples of respondents. Similar remarks concern the gender ratio indicator. It is calculated based on the 10-64 years old cohorts (page 65: "based on these 900 age cohort-district-year combinations, the total number of working-age (10-64 years of age) men and women are calculated").

Page 56-57 and Table 4.7: "However, for the variable 'permission to work', the data suggests that the percentage of 'permitted' to work is relatively higher than those who are 'not permitted' to work." The calculated numbers on the number of women "permitted" are very high (more than 50% of all women in the sample). They are significantly higher than the numbers obtained in "employment decision" variable (only about 20% of women decide about their own employment). Page 57: "It displays the fact that there is inconsistency in these responses regarding who makes women's employment decisions in the household and permission to work, which makes these indicators susceptible to bias. (...) Therefore, this research intends to use these indicators as control variables rather than to identify causal links. Thus, quantitative analysis prefers to use a data-driven indicator on the working-age gender ratio".

In my opinion the construction of the questions which are the base for the "permission to work" indicator is unclear and may therefore lead to biased answers. For example, the Author states: "women who select options 2, 3, 4, and 5 are combined and coded as 1 to make the first category of this variable, i.e. 'permitted.'" In my opinion, the statement "Don't want to work outside home" does not say anything about permission. It states that the woman does not want to take a paid job. Maybe I am wrong (I do not know the mentality of Pakistani women), but it may be due to the fact that she was brought up in a very traditional family and she simply cannot imagine herself being on the labor market. Similarly, the statement "Too busy doing domestic work" is, in my opinion, very unclear, and do not prejudice that the woman is permitted to work outside. Nevertheless, a table with percentage of the answers to particular questions maybe would be helpful.

Page 65, Figure 4.4. presents the average gender ratio in Pakistan in 2006-2014. It shows that, after being at the quite constant level in 2006-2012, in the last analyzed years it significantly dropped. Figure 4.5. shows the district level average gender ratio². The figure shows that the differences by districts are extremely high: the numbers differ from 0.53 to 1.40. Since this variable is crucial for the first research, I think a more detailed explanation of these differences should be provided. It would also be interesting to see a table with changes in gender ratio by districts (or only in those districts with the biggest changes observed).

Page 67: "Exposure to extreme weather events is estimated as a birth cohort and district-specific variable to identify how many extreme weather events a person has been exposed to throughout their lifetime. The longer a person lives, the more will be their exposure, hence more likely they will experience out-migration due to weather events exposure." I am not sure if I agree with this statement: it means that a 60-years old man who has survived e.g. 20 extreme weather events is more likely expected to migrate than a 20-years old man who has survived only 7 extreme weather events. In my opinion, the probability of migration is higher in the case of a 20-years old man even if the number of extreme weather events survived is lower. I do not have any better proposals of how to change the construction of this variable. However, in my opinion, the construction of this variable is crucial for the results.

Page 67: "'moving age' is specified as working age, i.e., 10-64 years." On the same page the Author states "'exposure' is also calculated by considering 'moving age' the same as 'working age.'" I would

² I am not sure whether it can be called the „working-age gender ratio" since it is calculated taking into account not only persons in working-age but also below it.

suggest excluding from the analysis the persons below 15 years old who in my opinion do not decide themselves about the migration or work decisions. Since the whole research is about decisions (to participate in labor market, or to migrate etc.) I would suggest to limit the analyzed samples to persons aged 15 up to 49 years old (being both in the working age and mobile/moving age).

Page 80: "The cash assistance is provided based on the poverty score calculated using the Proxy Means Test (PMT) method from the scale of 0 to 100. A poverty score of 16.17 is chosen as a threshold to determine the treatment and control groups. Households with poverty scores less than or equal to 16.17 are considered treated, and households above 16.17 are control households." Does it mean that the control group consists of households with poverty score above 16.17 up to 100? What does the score 100 indicate? Is it indication of poor families or when the score equals 100 it indicates rich families? It needs to be clarified.

Chapter 5.

Page 81: "Sub-section 5.2 of this chapter presents TSLS estimation results on the pooled cross-section of PSLM to examine the causal effect of EGRB – measured through district-level variation in gender ratio – on women's LFP decisions."

I really miss the explanation why gender ratio serves as an approximation of EGRB. On page 5 the Author states: "The research also utilizes Becker's marriage market hypothesis (Becker, 1981) to explain how variation in gender ratio affects women's LFP." Page 6: "This hypothesis and neoclassical labor supply theory are used as theoretical foundations to explore whether exogenous variation in gender ratio due to climate-induced migration cause women's LFP to increase, thereby making traditional social norms costly to persist." In chapter 4, the Author describes two EGRB measures from PSLM survey, then states that both measures are biased and decide to use gender ratio as a proxy of gender role beliefs.

Page 82: "a 1 percent increase in gender ratio will reduce the women's labor force participation by 5 percent and vice versa." In my opinion it should be "percentage points", not "percent".

Page 84: The positive relation between gender ratio and LFP of women was found. The Author underlines that this result is contrary to theoretical considerations. Page 84: "The interpretation of the IV result suggests that an increase in gender ratio improves the labor market working conditions for women, which is reflected in higher FLFP in response to exogenous variation in gender ratio. Our results are also contrary to the available literature on unbalanced sex ratio and its effect on FLFP." Page 84: "Our results can be interpreted so that even if there is a male-biased sex ratio, women still increase their labor market participation. One explanation of this relationship could be that extreme weather events especially, floods and extreme temperatures destroy household livelihoods. Therefore, to mitigate the effect of income loss, women and men will increasingly take the responsibility of providing income to the household. They may be compelled to work in the fields, sell homemade production, or find a small job to meet the households' financial needs."

I wonder whether the positive relation between gender ratio and LFP of women cannot be to some extent explained by the differences in the urbanization ratio across districts. I would expect that in more urbanized districts the relation of men to women is higher (more men seek work in urban centers) and simultaneously, the share of women at the labor market is higher in more urban areas due to less traditional norms. In regions with lower male to female ratio (rural areas – due to migration) and more traditional social norms, the FLFP is lower. An increase in male to female ratio, especially in urban areas goes with more modern social norms and more FLFP. However, it is only my intuition.



I would suggest looking at the data on differences in FLFP, gender ratio, and urbanization ratio by districts; maybe it would help in interpreting the results. Maybe as a robustness check, the Author could exclude most or least urbanized districts and compare the results.

Moreover, on page 9 the Author states that "some omitted district-specific and socio-economic conditions could influence both the gender ratio and outcome variable FLFP". I wonder whether some district-level variables could be included in the model to catch up some common factors which can influence the social norms and female participation at a district level e.g. the contact of a district to external, less traditional lifestyle (measured for example by the share of tourism in GDP or employment, or the share of foreign investments in a given district or urbanization ratio).

Page 84-85: A positive relation between number of extreme weather events and gender ratio was found by the Author. Page 84: "The first stage result in Table 5.2 shows that an increase in 'exposure' leads to a higher gender ratio, i.e., fewer women than men. This result reveals women relocating themselves as compared to men." Page 85: "It implies that there are more men relative to women in those districts, and women are found to be less in number than men in response to higher exposure to weather events, which explains the phenomenon of female migration from one district to another rather than male out-migration."

I am not sure I do agree with this interpretation. Taking into account the statistics given by the Author that huge share of women in Pakistan are not free to go unaccompanied to a shop or medicine center, it is difficult to accept the explanation that women migrate more often than men in response to extreme weather events.

The Author states that intensive migration from rural to urban areas takes place in Pakistan in last years. Are there any official numbers on internal migration (by gender) available? Page 15: "Pakistan's Labor Force Survey dataset provides information on migration from one administrative district to another, identifying several possible reasons for migration. But migration data due to climatic events are not available". Maybe the Author could compare the numbers on migration from LFS to confirm whether the migration of women is really present.

Page 84: "Therefore, it can be said that more exposure to extreme weather events, which results in a higher gender ratio, will make the prevailing strict social norms undesirable, which is reflected in higher women's LFP." This sentence is in contrast to the theoretical considerations in the thesis.

Page 85: "The coefficient of 0.16 indicates that a 1% increase in exposure to extreme weather events leads to a 16% increase in gender ratio in a district." I am not sure whether this interpretation of estimated coefficient is correct. The variable "exposure to extreme weather events" is calculated as the average number of events per maximum age in the cohort. The gender ratio is calculated as the number of men divided by the number of women in the cohort. Let us assume that the number of events is 20 and the maximum age is 49, so the exposure equals 0.204. Let us assume also that in a given cohort the number of men equals the number of women so the gender ratio is 1.00. According to the interpretation of the Author, the increase of 1% in exposure (i.e. from 0.204 to 0.206) would increase the gender ratio by 16% (i.e. from 1.00 to 1.16).

Page 86: "Moreover, the study also found that rainfall, flood, or moisture is associated with retention (as opposed to migration), which means people do not migrate if there is a flood or heavy rainfall." I am not sure whether the results are not due to the construction of the exposure indicator. The indicator is the highest in districts with high share of extreme weather events per cohort, so maybe these are also districts with relatively high share of more aged inhabitants (some of the younger ones have already migrated). In those regions the higher gender ratio is maybe due to higher share of elderly men among inhabitants. Maybe despite of bad weather, elderly people do not migrate because they don't want to change their place of living or they do not have enough money to change

the place of living. This is only my intuition, a detailed analysis of statistical data by cohorts and districts would be helpful to interpret the obtained results. Maybe as a robustness check, the Author could analyze the exposure and gender ratio relationship separately for different cohorts. Moreover I would suggest analyzing more deeply data on the age structure of men and women across districts.

Page 86: "The models include a set of individual and household level control variables and two gender norms indicators from PSLM." As far as I understood from the explanations of the Author, the gender ratio variable is used in the first research as an approximation of the EGRB indicator. The Author explains two gender norms indicators which are available from the PSLM survey, however she concludes that both of them (employment decision and permission to work) cannot be used as explanatory variables for the FLFP since they may be seriously biased. But both of them are used in the model as control variables. So in the model three variables are used as the approximations of EGRB and two of them are regarded by the Author as not very reliable. Can you explain why all these variables enter the model simultaneously and whether it does not cause bias in the estimates?

Page 90: "The lower age limit is chosen because PSLM data capture labor force statistics from 10 years of age and older. The upper limit is selected because it is the official limit in the definition of the working-age population in Pakistan (Pakistan Economic Survey, 2020)." The upper limit of official working-age in Pakistan is 64; what is the lower limit of official working-age in Pakistan?

Page 92-93: "1 point increase in LFP leads to gender role belief coincidence to decrease by 0.70 points" (...) "Regarding the main effect of husbands' gender norms, measured as an index with MCA, which is 0.53 means that with one standard deviation increase in husbands' gender role beliefs, i.e., husbands having more non-traditional attitudes, leads to 0.53 units increase in the likelihood that husband and wife have similar gender role beliefs." The interpretation of the estimates should be checked carefully (whether it is an increase by one percent, percentage point, or unit) and corrected if necessary.

Chapter 6.

Page 103-104: "From the results of study 1, women are found to be relocating themselves due to exposure to extreme weather events, and these women are mainly poor, less educated, and less skilled." I am not sure whether the Author can make such a strong statement for policy implications based the obtained results. In my opinion it should be to higher extent supported by the analysis of statistical data on migration of men and women in Pakistan.

Page 104: "Therefore, there should be such a mechanism at the district level to observe the migration patterns after any extreme weather event." I do agree with the proposed idea. I do not know how the process of changing the place of living works in Pakistan, whether the movements from one district to another are registered or - to a high extent - not. More information whether the monitoring of the migration process is possible would be helpful.

I would like to ask the Author to recommend which social or labor market policies should be implemented to improve the situation of women and their position on Pakistani labor market in next years. How do you think the Pakistani government can use the results of your work to improve the situation of women and the position on Pakistani labor market?

Appendix.

I would suggest clarifying the description of the tables since sometimes it is not easy to find out what exactly is presented in the table. An example on page 123: "Table 2 Women's decision making in household". I think it should be added that it is the percentage of all requested women who positively answered given question.



Another example, page 133, Table 24 Summary of all variables: PSLM and EM-DAT. Variable "Age": I can expect that this is the average age in the group of respondents. However the numbers by "Employment decision" variable should be described: what does the number 1.83 in 2005-2006 mean? The numbers on employment decision in Table 24 are completely different from those in Table 4.7 where the percentage of respondents with non-traditional and traditional views is presented (e.g. 0.17 and 0.83 in 2005). All the numbers in the Table 24 should be explained to readers. Page 134, Table 25: The same remarks as to Table 24.

Page 135, Table 26. The full results of the model 1 are very interesting. In my opinion at least some of them should be analyzed in the main text. Interesting results of the estimation are observed particularly in the case of employment decision and permission to work variables. It could be interesting to see also full results of the second survey, with the estimated parameters of all variables used in the models.

Small remark. Before sending the results of the research to journals, the thesis should be carefully proofread and some language mistakes should be corrected.

A summary of the most important comments and suggestions:

- Chapter 1 should, in my opinion, be completed with an overview of statistical data of the Pakistani economy, the most important labor market indicators, and their differentiation by gender, age groups, and regions.
- The theoretical foundations presented in Chapter 1 should be extended and should cover all economic theories used in empirical analyses.
- In Chapter 2 it would be worth adding a brief overview of the indicators of social norms used in the literature so far along with a discussion of their advantages and disadvantages.
- Chapter 4: The indicators used in the thesis are constructed on the basis of different subsamples (e.g. groups of women aged 10 and more, aged 10-64, and aged 15-49). It would be worth unifying the subsamples so that the indicators constructed on their basis (dependent and explanatory variables) apply to the same groups of people. This remark applies to all indicators: the rates of women's participation in the labor market and social norms calculated on the data from PSLM and BISP, as well as to the gender ratio, and the exposure to extreme weather events index.
- The strong regional differentiation of the gender ratio variable which is crucial for the first empirical analysis requires a deeper explanation.
- My doubts are also raised by the construction of the exposure to extreme weather events indicator and its interpretation.
- Chapter 5: I am not convinced by the interpretation of the positive correlation between the gender ratio and the FLFP obtained in the first study. I think it should be accompanied by in-depth look into statistical data and further sensitivity analysis.
- I am also not convinced by the interpretation of the positive relationship between the index of exposure to extreme weather events and the gender ratio obtained in the first study. Similarly, in-depth look into statistical data and further sensitivity analysis should be provided.
- My doubts are raised by the construction of the first model, in particular with the fact that three variables which are used as the approximations of EGRB enter the model simultaneously. More explanations whether it does not bias the estimates should be provided.



- Chapter 6: Referring to my comment on the interpretation of the positive relationships between the analyzed variables obtained in the first study I do not fully agree with the conclusions and recommendations presented on their basis.
- Please recommend which policies, in your opinion, should be undertaken by the Pakistani government to improve the current situation of women in the labor market. How can your results help in carrying out these policies?

Conclusions

Taking into account the requirements of the Act on academic degrees and academic title as well as on degrees and title in the field of art, I state that the dissertation presented for review is a scientific study constituting an original solution to the research problem, demonstrates the general theoretical knowledge of the Author in the field of economics and finance and confirms the Author' ability to independently conduct scientific research. On this basis, I recommend to the Scientific Council of the Economics and Finance Discipline an application for admission of Mudassira Sarfraz's dissertation to public defense.

23.02.2022

Melissanohe
Mejchowski