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THE EFFECT OF SOCIAL ASSISTANCE ON EARLY CHILDBEARING IN VIETNAM: THE MEDIATING ROLE OF MIGRATION

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Abstract. *The study analyzes the relationships among migration, early childbearing, and child well-being social assistance within the cluster level. Using data from the Vietnam Sustainable Development Goal Indicators for Children and Women survey (SDGCW) by the General Statistics Office (GSO) and the United Nations International Children's Emergency Fund (UNICEF) of Vietnam in the period 2020–2021, while applying Tobit models, the results show that the increase of households' social assistance receipt will limit the likeliness of family members to make migration decisions, thereby decreasing early childbearing. The study is expected to be the basis for making implications to improve the policy system and social assistance programs aimed at minors, especially targeting the group of minor migrants with the goal of reducing early childbearing.*

Keywords: *social assistance, Migration, Early childbearing, Vietnam, Tobit models*

Introduction

Early childbearing is acknowledged as a global problem because this event has severe health, economic and social consequences for both the teenage mother and her child [1]. Each year, 12 million girls under 18 are married, and globally, 21% of women alive in 2020 were married before turning 18 [2]. Meanwhile, according to data given by the United Nation Fund Population Agency, there are about 16 million girls aged 15–19 given birth yearly. In Southeast Asia, despite declines in recent decades, the prevalence rates of child marriage and early union remain high in this region. The percentage of women aged 20 to 24 who were married or in union before 18 ranges from 35.4% in Lao PDR to 11% in Viet Nam. In India, 7% of women were married by the age of 15 in 2017, while in Bangladesh, the percentage was even higher at 22% [2]. The cause may stem from traditional practices such as child marriage, limited access of sexual health information and services [1], child sexual abuse. As children are inherently considered vulnerable [3] and largely influenced by their caregivers [4]. Therefore, attention from society is noticeably given to this specific group.

Serving as a livelihood strategy that vulnerable households pursue to diversify their income sources [5; 6], migration is considered an important factor influencing teenage pregnancy and early childbearing. Specifically, migration is acknowledged as a common strategy in a low-middle income country with a strong growth rate like Vietnam [7]. According to data from the General Statistics Office, Vietnam informed 6.4 million migrants in 2019, accounting for 7.3% of the country's total population aged 5 years and older. This is not only considered a characteristic feature of low-middle income countries, especially in countries with rapid growth rates like Vietnam [7] but is also a livelihood strategy that households in vulnerable communities pursue to diversify their sources of income [5; 6].

The deeply integrated economy causes the problem of rich-poor divide, vulnerability, and income inequality to increase. Considered as an intervention measure on income by the Government, social assistance plays an important role in helping to shorten the income gap as well as contributing to social stability. As the two groups of migrants and teenage mothers are considered vulnerable [8], with the goal of social security and ensuring sustainable development of the economy, teenage mothers in the context of migration need to receive more attention from the community through social assistance programs to minimize the consequences for teenage mothers and their children.

However, research on early childbearing in the context of migration and social assistance programs is very limited. Therefore, this study focuses on the relationships between migration, early childbearing, and social assistance in the context of Vietnam – a low-middle income with rapid growth rates. This research consists of 5 parts. Following the introduction of part 1, part 2 provides an overview of the theoretical basis. Part 3 comprises the research methods. Part 4, in turn, analyzes and discusses the research results. Finally, conclusions and implications are given.

Literature review

The impact of migration on early childbearing

Research on migration in developing countries has shown that adolescents are the group most likely to migrate [9; 10], on the other hand, migrated adolescents are more vulnerable than their native peers due to lack of care within family, limited connect with society [11]. These factors risk causing negative impacts on migrated adolescents, including early pregnancy and early childbearing [12]. Specifically, migrants have been shown to be more likely to become pregnant and give birth during adolescence than non-migrants [13].

This is explained by the fact that adolescents who immigrate from other places often tend to accept many risky behaviors, potentially causing unwanted pregnancies [14]. Migrants from mountainous or rural areas with low levels of development also carry traditional ideologies and beliefs such as child marriage or child sexual abuse, which are proven to be the causes to increase teen pregnancy and early childbearing [1]. In addition, migration due to seasonal job changes, changes in economic production conditions increases barriers to accessing typical public services such as education and health care in addition to limitations in the process of interacting with social relationships of migrant adolescents [13; 15], therefore increases their risk of pregnancy and early childbearing. Meanwhile, social assistance policies have not really created conditions for migrant groups, especially free migrants [16]. Accordingly, this research proposes the hypothesis:

H1: Migration increases the rate of early childbearing in Vietnam.

The impact of social assistance on migration

Social assistance plays an increasingly important role with migration as it supports social security for these groups, ensures stable development, and contributes to economic development. Previous studies have shown different correlations when considering the influence of social assistance on migration, in which both directions appear promoting and limiting migration behavior.

In terms of promoting migration, social assistance provides necessary financial and non-financial interventions to help subjects overcome barriers to migration such as lack of information about the destination and lack of awareness. about the potential benefits of migration [17]. Additionally, most economically deprived families do not have enough resources to finance are likely to migrate [18]. In the context of Vietnam, social assistance policies issued by the Government since 1986 has contributed to promoting the migration process, creating a stable and healthy development environment for individuals and households to seek better livelihood opportunities.

In terms of limiting migration, with the goal of rural development, locally targeted social assistance programs tend to reduce the motivation to migrate from rural to urban areas [19]. Specifically, subjects choose to stay in rural areas to receive benefits, while avoiding expensive urban costs. Therefore, assistance programs and policies aimed at poor households and economically disadvantaged areas reduce the motivation to migrate to another place to make a living [20]. In addition, some social assistance programs require recipients to be physically present locally, which reduces the probability of mobility [21].

Within the scope of this study, the authors expect that social assistance programs will reduce the motivation to migrate with financial and non-financial interventions that limit the level of vulnerability of individuals. individuals and households while promoting the ability to stay and continue to receive benefits. Accordingly, this research proposes the following hypothesis:

H2: Social assistance reduces the rate of migration in Vietnam.

Methodology and data

Data sources

The research uses data from the Survey measuring Viet Nam Sustainable Development Goal indicators on Children and Women 2020–2021, which is part of the Round 6 Global Multiple Indicator Cluster Survey Program (MICS 6) conducted by the GSO and UNICEF [22]. The survey consisted of 6 questionnaires, which are (1) Household questionnaire; (2) Water quality testing; (3) Individual women aged 15–49; (4) Individual men aged 15–49; (5)

Children under 5; (6) Children aged 5–17. The design process of the survey sample includes the determination of sample frame, sample size, clustering, listing households in the cluster, steps of sampling, stratification, and weighting, all of which are conducted by GSO and UNICEF. Briefly describe this process, first, the survey uses the clusters from the 2019 Vietnam Population and Housing Census, then households are randomly selected from the list of households in each cluster. In total, the sample includes 14,000 households across 700 clusters, each of which has 20 households with different characteristics (including areas, economic regions, and major ethnic groups). Thereby, with the advantages of the given data set, the authors examine the research relationship within the scope of 700 clusters to provide accurate estimates for indicators reflecting the status of children and women at the national level.

Research model

The authors use the Tobit regression model to examine the mediating role of migration in the relationship between social assistance and early childbearing among adolescents. The Tobit regression model was widely used by many researchers when analyzing relationships with various dependent variables such as: crime frequency [23], blood alcohol concentration [24], and charitable donations [25]. The constrained dependent variable can be left-censored, right-censored, or both-censored [26]. In this study, the Tobit regression model is chosen to analyze relationships in which the variables migration and early childbearing are the dependent variables as the value is limited in the interval from 0 to 1. Specifically, migration variable is measured based on the ratio of migrants to the sample cluster over the total number of members in the sample clusters, therefore the value of the migration variable is always limited on two sides: the left side (equal to 0 if the sample cluster has no migrants) and the right side (equal to 1 if all members in the sample cluster are migrants), similarly for the early childbearing variable (proportion of women between the ages of 15–49 giving birth before the age of 18 out of the total number of women aged 15–49 in the local sample considered). In summary, using the Tobit regression model to evaluate factors affecting migration and early childbearing is reasonable. Specifically:

Firstly, the study analyzes the impact of social assistance on migration through the Tobit regression model, shown in equation system (1):

$$\begin{cases} Mig_i = 0 \; if \; Mig_i^* \leq 0 \\ Mig_i = Mig_i^* \; if \; 0 < Mig_i^* < 1 \\ Mig_i = 1 \; if \; Mig_i^* \geq 1 \end{cases} \quad (1)$$

with $Mig_i^* = \beta_1 Socia_i + u_i; i = 1,2,..N$

where: N is the number of observations corresponding to 700 sample clusters.

Mig_i: migration rate to sample cluster i

Mig_i^*: expected value of Mig_i for observations within a limited range

$Socia_i$: vector of independent variables social support

β_1: vector of unknown coefficients corresponding to the social support variable

u_i: random error

Secondly, the study analyzes the impact of migration on early childbearing through equation (2):

$$\begin{cases} Ebear_i = 0 \; if \; Ebear_i^* \leq 0 \\ Ebear_i = Ebear_i^* \; if \; 0 < Ebear_i^* < 1 \\ Ebear_i = 1 \; if \; Ebear_i^* \geq 1 \end{cases} \quad (2)$$

with $Ebear_i^* = \beta_2 Mig_i + \beta_3 Hwel_i + u_i; i = 1,2,\ldots N$

where: N is the number of observations corresponding to 700 sample clusters.

$Ebear_i$: early birth rate in sample cluster i

$Ebear_i^*$: expected value of $Ebear_i$ for observations within a limited range

Mig_i: are vectors of the independent variable migration respectively

β_i: vector of unknown coefficients corresponding to the independent variable migration

u_i: random error

In addition, control variables that represent different clusters' characteristics are included in this research model. These are internal and external factors that are often considered in previous studies. Which are:

Area: Area control variables are used in studies by Coxhead et al. [27], Furstenberg et al. [28] to analyze differences between rural and urban areas on migration, early childbearing in adolescents.

Economic region: Economic region is used in research on migration [27], and early childbearing [29].

Ethnicity of household head: The variable ethnic head of household was chosen by Coxhead et al [27] when studying migration. This usage was also observed in Cuong&Linh study on household welfare [30]. Besides, the ethnicity of the household head is also a control variable considered in the relationship to early childbearing by Furstenberg et al. [28].

Household size: Large household size is considered a cause of reduced immigration rates. In addition, household size was also shown to have an impact on early childbearing in the study of Michelmore&Lopoz [31].

Living standard: Families belonging to the poor group have been shown to tend to migrate for livelihood purposes to improve their income [7].

Proportion of population in working age: Plane believes that the proportion of people in the labor force within families affects the migration process, specifically workers tend to move from underdeveloped areas to more developed areas with less labor concentration due to the recent oversupply of human resources in developed cities [32].

Results and discussion

Descriptive statistics

Descriptive statistical results of the variables used in the research model are presented in Table 1:

Table 1

Descriptive statistics of key variables

Variables	Mean	Standard deviation	Smallest value	Biggest value
Social assistance	0.5343	0.2444	0	1
Migration	0.1197	0.0812	0	0.4655
Early childbearing	0.0479	0.0852	0	0.6364

Source: compiled by the authors

Descriptive statistical analysis results are presented in Table 1. In which, social assistance with a range of values from 0 to 1 show that there exist clusters where no households receive any social assistance policies. On the other hand, there are clusters where members receive many social assistance programs (with a maximum value of 1). Meanwhile, migration has a mean value of 0.1197 and falls within approximately from 0 to 0.4655, this value gap shows a large difference between the clusters. Specifically, there are sample clusters with no immigrants, but there are also sample clusters with the number of immigrants reaching nearly half of the population. Moreover, the average value of 0.1197 (11.97%) implies that on average of every 100 people, there will be 12 immigrants in the sample cluster. Finally, early childbearing values range from 0 to 0.6364, showing that in addition to clusters that do not record any early childbearing, there exist clusters with much higher rates of early childbearing (63.64%).

The impact of migration on early childbearing in Vietnam

The results of analyzing the impact of migration on early childbearing in Vietnam are presented in Table 2. The value Prob>chi2 of the Tobit regression model reached 0.000, showing that the research model used was significant, this proves that the Tobit regression model is suitable for the data file and can be used.

The regression results show a positive regression coefficient of 0.1577 and a significance level of 10%, implying that migration has a positive influence on early childbearing. In other words, when the immigration rate increases by 1%, the early birth rate in the sample cluster also increases by 13.47%, this result is consistent with the hypothesis H1 set by the authors.

Table 2

Estimation results on the impact of migration on early childbearing in Vietnam

Variable	Coefficient
Early childbearing	-
Migration	0,1577*
Economic regions (#Ref: North Central and Central coast)	-
Red River Delta	0,0045
Northern midlands and mountains	0,0002
Central Highlands	0,0301
South East	0,0386*
Mekong River Delta	0,0484*
Areas (#Ref: urban areas)	-
Rural areas	0,0071
Household size (#Ref: small scale)	-
Large scale (>6 members)	0,0288**
Ethnicity of household head	-
Kinh/Hoa	-0,1467***
Tay/Thai/Muong/Nung	-0,0721***
Khmer	-0,1025***
Mong	0,0885***
cons	0,0125
Log likelihood	11,2131
LR chi2 (13)	366,19
Prob>chi2	0,0000
Left-censored observations at Eealy childbearing ~h<=0	437
Uncensored observations	263
Right-censored observation	0

Note: *p<0,1; **p<0,05; ***p<0,01

Source: compiled by the authors

To further investigate the effects of migration and household welfare on early childbearing in Vietnam within the sample cluster, the authors continue to examine the results of this relationship within clusters' characteristics. Specifically:

In terms of household size, at the 5% significance level, large-sized households have a 4% higher rate of early childbearing than small-sized households.

In terms of ethnicity of the household head, at the 1% significance level, sample clusters dominated by household heads of Kinh or Chinese ethnicity recorded the lowest early birth rate (15.52%). In other words, when the proportion of household heads of Kinh or Chinese ethnicity in the sample cluster increases by 1%, the rate of early birth here decreases by about 14.67%. Following that, the early birth rate also witnessed a decrease in sample clusters with the proportion of Khmer and Tay/Thai/Muong/Nung ethnic household heads increasing to 1%. In contrast to the correlation of the above ethnic groups, with a significance level of 1% and a positive regression coefficient of 0.0885, it shows that when the proportion of Mong ethnic household heads in the sample cluster increases by 1%, early childbearing rate in the sample cluster increased by 8.85%.

The impact of social assistance on migration in Vietnam

The results of analyzing the impact of social assistance on migration in Vietnam through the Tobit regression model are presented in Table 3. With an LR chi2 (17) value of 430.03 and a significance level of 1%, the Tobit model is more appropriate and statistically significant than the empty regression model (no independent variables are included in the model). The regression coefficient has a negative sign (-0.030), which shows a negative correlation between social assistance and migration. In other words, when the proportion of members in the sample cluster receiving social assistance programs increases by 1%, the immigration rate of the corresponding sample cluster tends to decrease by 3%. This is completely true with hypothesis H2 that the authors set out.

Table 3

Estimation results on the impact of social assistance on migration in Vietnam

Variable	Coefficient
Migration	-
Social assistance	-0,030***
Economic regions (#Ref: North Central and Central coast)	--
Red River Delta	0,0187**
Northern midlands and mountains	0,0084
Central Highlands	0,0343***
South East	0,0489***
Mekong River Delta	0,0120
Areas (#Ref: urban areas)	-
Rural areas	-0,0271***
Household size (#Ref: small scale)	
Large scale (>6 members)	-0,0158***
Living standard (#Ref: Poorest)	-
Poor	0,0050
Middle	-0,0043
Rich	-0,0013
Richest	-0,0210*
Ethnicity of household head	-

Variable	Coefficient
Kinh/Hoa	0,0453***
Tay/Thai/Muong/Nung	0,0363***
Khmer	0,0312**
Mong	0,0640***
Proportion of population in working age	-0,3503***
cons	0,2450
Log likelihood	951,62
LR chi2 (13)	430,03
Prob>chi2	0,0000
Left-censored observations at Eealy childbearing ~h<=0	9
Uncensored observations	691
Right-censored observation	0

Note: *p<0,1; **p<0,05; ***p<0,01
Source: compiled by the authors

In terms of economic regions, the North Central and Central Coast region is set as the reference group when comparing dummy variables and estimated results of the variables (except for the Northern midlands and mountains; the Mekong River Delta) are all statistically significant. Specifically, the North Central and Central Coast region records the lowest immigration rate among economic regions. On the contrary, the South East is the economic region with the highest immigration rate, 4.89% higher than the reference group. In addition, the immigration rate tends to decrease in sample clusters in the Central Highlands and Red River Delta regions, with 3.43% and 1.87% higher than the reference group, respectively.

In terms of areas, at the 1% significance level, sample clusters in rural areas have an immigration rate 2.71% lower than sample clusters in urban areas.

In terms of ethnicity of the household head, all ethnic groups reported a history of immigration. However, the prevalence of immigration varies between ethnic groups. Specifically, the sample cluster with the highest proportion of Kinh or Chinese household heads has the highest immigration rate (4.53%). In other words, when the number of Kinh or Chinese household heads increases by 1%, the immigration rate of this sample cluster also increases by about 4.53%. Meanwhile, the lowest recorded immigration rate (3.12%) was in sample clusters with a high proportion of household heads of Khmer ethnicity. Considering the proportion of the working-age population, when the working-age population of the sample cluster increases by 1%, the immigration rate here will decrease by 33.25%.

Conclusions and implications

Using the Tobit regression model, migration is proven to increase early childbearing rate, on the other hand social assistance programs contribute to reducing the migration rate, thereby reducing early childbearing. By looking within household cluster level, the results of this study provide empirical evidence that migration has an impact on increasing early childbearing rate (hypothesis H1). This problem is proved due to the process of changing residence (temporary or permanent job change, change due to economic conditions or to find livelihood opportunities, etc.) which can cause female adolescents to be more vulnerable, therefore have a higher risk of teen pregnancy and early childbearing. In the context of a developing country like Vietnam, the process of migration from rural to urban areas is taking place strongly while the level of education and understanding of people, especially

in rural and mountainous areas are not high, makes the author's hypothesis statistically significant.

The results also show that social assistance significantly reduces the migration rate of members of the region (hypothesis H2). This is explained by assistance programs, which include financial and non-financial support (social services) can improve the living conditions of minors, minimizing poverty and vulnerability. In addition, educational programs also help improve understanding for adolescents, especially migrant adolescents, a group of people who have limited access to medical services as well as social relationships.

The research shows that social assistance programs can reduce regional migration among family members, thereby reducing early childbearing, which calls for the urgent of improving social assistance programs of the Government and non-governmental organizations for minors in general and migrated minors specifically in many aspects such as support in accessing medical services, health care as well as educational policies to facilitate and improve understanding of migrants, thereby stabilizing their quality of life in the current place of residence as well as contributing to positive improvements in the condition of early childbearing.

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Appendix A:

Variable	Subcomponent	Explanation	Measurement
Migration		Number of immigrants to the sample area	Rate of immigrant members to the sample area for at least 1 year over the total number of members in the sample area
Early childbearing		Women aged 15–49 who gave birth before the age of 18 in the sample area	Rate of women aged 15–49 who gave birth before the age of 18 over the total number of women aged 15–49 in the sample area
Social assistance		Members living in households receiving social assistance	Rate of members living in households in the sample area that received any form of social assistance in the past 3 months over the total number of members in the sample area
Economic Region	6 economic regions	Sample areas belonging to 6 economic regions	1: Sample areas in the Red River Delta region 2: Sample areas in the Northern Midlands and Mountainous region 3: Sample areas in the North Central and Central Coastal region 4: Sample areas in the Central Highlands region 5: Sample areas in the Southeast region 6: Sample areas in the Mekong River Delta region
Areas	Urban areas	Sample areas in urban/rural areas	0: Sample areas in urban areas 1: Sample areas in rural areas
	Rural areas		
Household size	Small scale	Average household size in the sample areas	0: Average household size in the sample areas is less than or equal to 6 1: Average household size in the sample areas is greater than 6 Large size
	Large scale		
Ethnicity of household head	Kinh or Hoa	Number of household heads in the sample areas belonging to the Kinh or Hoa ethnic group	Rate of household heads in the sample areas belonging to the Kinh or Hoa ethnic group over the total number of household heads in the sample areas
	Tay/Thai/ Muong/Nung	Number of household heads in the sample areas belonging to the Tay/Thai/Muong/Nung ethnic group	Rate of household heads in the sample areas belonging to the Tay/Thai/Muong/Nung ethnic group over the total number of household heads in the sample areas
	Khmer	Number of household heads in the sample areas belonging to the Khmer ethnic group	Rate of household heads in the sample areas belonging to the Khmer ethnic group over the total number of household heads in the sample areas
	Mong	Number of household heads in the sample areas belonging to the Mong ethnic group	Rate of household heads in the sample areas belonging to the Mong ethnic group over the total number of household heads in the sample areas
Living Standards Group	5 living standards groups	Sample areas belonging to 5 living standards groups	1: Sample areas in the poorest living standards group 2: Sample areas in the poor living standards group 3: Sample areas in the average living standards group 4: Sample areas in the rich living standards group 5: Sample areas in the wealthiest living standards group
Labor Force		Members in working age in the sample areas	Rate of members in working age in the sample areas over the total number of members in the sample areas

Appendix B:

Variable	Sets of questions	Questions
Early Childbearing	Questionnaire for individual women	WB3. In what month and year were you born? DATE OF BIRTH MONTH __ __ DK MONTH 98 YEAR __ __ __ __ DK YEAR 9998 WB4. How old are you? *Probe:* How old were you at your last birthday? *If responses to WB3 and WB4 are inconsistent, probe further and correct. Age must be recorded.* AGE (IN COMPLETED YEARS) __ __ CM1. Now I would like to ask about all the births you have had during your life. Have you ever given birth? *This module and the birth history should only include children born alive. Any stillbirths should not be included in response to any question.* YES 1 NO 2 CM14. *Check CM11: How many live births?* NO LIVE BIRTHS, CM11=00 0 ONE OR MORE LIVE BIRTH, CM11=01 OR MORE 1 BH4. On what day, month and year was (*name of birth*) born? *Probe*: What is (his/her) birthday? (Day/Month/Year)
Migration	Questionnaire for individual women & individual men	WB15 + MWB15: How long have you been continuously living in (*name of current city, town or village of residence*)? *If less than one year, record '00' years.* YEARS __ __ ALWAYS / SINCE BIRTH 95
Social assistance	Household Questionnaire	ST1. I would like to ask you about various external economic assistance programmes provided to households. By external assistance I mean support that comes from the government or from non-governmental organizations such as religious, charitable, or community-based organizations. This excludes support from family, other relatives, friends or neighbours. ST3. Has your household or anyone in your household received assistance through (*name of programme*)? ST4. When was the last time your household or anyone in your household received assistance through (*name of programme*)? *If less than one month, record '1' and record '00' in Months.* *If less than 12 months, record '1' and record in Months.* *If 1 year/12 months or more, record '2' and record in Years.*

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ВЛИЯНИЕ СОЦИАЛЬНОЙ ПОМОЩИ НА РАННЕЕ ДЕТОРОЖДЕНИЕ ВО ВЬЕТНАМЕ: РОЛЬ МИГРАЦИИ

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Аннотация. *В статье анализируются взаимосвязи миграции, раннего деторождения и социальной помощи детям на кластерном уровне. Используя данные исследования «Показатели достижения целей устойчивого развития для детей и женщин Вьетнама», проведенного Главным статистическим управлением (GSO) и Международным чрезвычайным фондом помощи детям при Организации Объединенных Наций (ЮНИСЕФ) в Социалистической Республике Вьетнам в 2020–2021 гг., и применяя модель Тобита, получены результаты, указывающие на то, что увеличение доходов домохозяйств при получении социальной помощи ограничит вероятность принятия членами семьи решений о миграции, и тем самым снизит раннее деторождение. Ожидается, что вышеназванное исследование станет основой для принятия решений по совершенствованию политической системы и программ социальной помощи, направленных на несовершеннолетних, особенно на группу несовершеннолетних мигрантов с целью сокращения раннего деторождения.*

Ключевые слова: *социальная помощь, миграция, раннее деторождение, Вьетнам, модель Тобита*

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