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Skill Level, Job Security, and Remittances: Theory and Empirical Evidence from the Perspective of Origin Countries

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Abstract

This paper investigates the impacts of migrants' skill level and migrants' job security on remittances, both theoretically and empirically, using dataset of three Maghreb countries (Morocco, Algeria, and Tunisia). This paper uses the ordered logistic regression to estimate the effects of migrants' skill level and migrants' job security on remittances. Findings suggest that migrants' skill level according to the education attainment does not influence remittances, and remittances are negatively correlated with migrants' skill level according to the vocational training received in the host country. Results reveal also that there is a positive relationship between migrants' job security and remittances.

مستوى المهارات والأمن الوظيفي والتحويلات المالية : النظرية والأدلة التجريبية من وجهة نظر البلدان المرسلة

عمر باشاغا

ملخص

تدرس هذه الورقة تأثير كلاً من مستوى مهارة المهاجرين والأمن الوظيفي لهم على تحويلاتهم الخارجية للدولة الأم من الناحيتين النظرية والعملية ، تستخدم هذه الدراسة بيانات ثلاث من دول المغرب العربي هي المغرب والجزائر وتونس ، جُمعت عن طريق برنامج MIREM الفرنسي ، واستخدمت الدراسة نموذج الانحدار المنطقي في تقدير هذا التأثير . وقد أوضحت النتائج عدم وجود علاقة بين مستوى التعليم)كمتغير يمثل مستوى مهارة المهاجر(و تحويلاته المالية الى بلده الأم ، بينما أوضحت وجود علاقة عكسية في حالة تمثيل مستوى مهارة المهاجر بما تلقاه من تدريب مهني في الدولة المضيفة . وأظهرت النتائج أيضاً وجود علاقة طرديه بين تحويلات المهاجرين والأمن الوظيفي لهم .

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1. Introduction

This paper analyses the impact of migrants' skill level and migrants' job security on the level of remittances. In the first issue ⟨the relationship between remittances and skill level⟩, some researchers found that the increased number of skilled migrants is associated with a larger flow of remittances ⟨Faini, 2007⟩. While other results found that skilled migrants remit less than unskilled migrants ⟨Niimi et al., 2010⟩. To the best of our knowledge, the second issue ⟨the relationship between remittances and job security⟩ has not yet been studied in the migration and remittances literatures, except that report of Bank of Jamaica, which suggests that the level of remittances in Jamaica has been raised above the pre–crises levels in 2008, that is occurred due to the job security of the core senders and the types of jobs that migrants have not being as significantly affected by the recession. For example, jobs in nursing, education among others. The affected job areas are primarily construction, auto, manufacturing, housing and finance ⟨Bank of Jamaica, 2012⟩. Since a higher degree of migrants job security implies a more stable pattern in migrants income, and a positive relationship with remittances to the origin country is expected.

Migrant workers' remittances constitute the second biggest source of foreign transfers to the developing world with Foreign Direct Investment ⟨FDI⟩ and are more important than public aid, official development aid, and private capital transfers. Thus, international organizations such as the IMF, the World Bank, and home country governments, consider remittances flows as an engine of development. Hence, the increasingly quality–selective nature of immigration policies in many traditional destinations attracts skilled migrants while also discouraging unskilled migrants. This has raised concerns in developing countries and international development institutions, particularly with the steady increase in migrant' remittances going to these countries either numerically or as share of GDP. These concerns are based on the belief that highly skilled migrants remit less, in addition to rising skilled migration flows highlighted by the World Bank ⟨Docquier et al., 2011⟩. Indeed, there are many reasons to anticipate a negative relationship between the amount of remittances and the number of skilled migrants. In particular, skilled migrants often come from richer families and have a higher propensity to migrate with their entire household and a lower propensity to return to their original countries. This reduces the incentive to remit due the reduced need to maintain prestige and ties to the home community. On the other hand, more highly skilled migrants have a higher income potential, are less likely to be illegal, more likely to have bank accounts and have access to less costly transfer means ⟨Docquier & Rapoport, 2007⟩.

The two main issues in this paper are explained both theoretically and empirically. At a theoretical level, the literature on the micro foundations of the aggregate remittances is described, along with the skill level and job security. The study shows the importance, trends and recording methods of remittances cited in the migration and remittances literature. It discusses several criteria for measuring migrants skill level and its impact on economic performance in developing countries. It describes the job security and definitions in the economic literature. Finally, this paper explains the main linkages between the amount of remittances and the main variables in this study 〈migrants' skill level and migrants' job security〉.

The Maghreb countries were chosen as a case study due to the availability of data, and the share rate of total global remittances, in order to analyze the following two questions:

– Do skilled migrants remit more or less than unskilled migrants?

– Does migrants' job security impact on the level of remittances?

To answer these two questions empirically, this paper uses a dataset collected in 2006 from the Migration de Retour au Maghreb 〈MIREM〉 project. This dataset provides all the information concerning the migrants' behavior, so it is suitable as the data source for this paper.

The findings of this paper show that migrants' skill level doesn't affect on the amount of remittances. The findings show also, that migrants who have received vocational training in their host countries, remit less than other migrants who have not received this training. On the other hand, the migrants' job security has a positive impact on the amount of remittances.

Based on the above, this paper is organized in the following way. Section 2 provides a selective review of the existing work on the two main issues in this paper, focusing on the definition of remittances, skills level among migrant workers and job security. Section 3 provides good analyses on the trends of the remittances in the Maghreb countries, in comparison with global remittance patterns. Section 4 describes the dataset used in the study and provides some descriptive statistics. Section 5 explains the econometric model which is used to estimate the empirical relationship between relevant variables, with the estimation results displayed in section 6. Finally section 7 shows the main results of the study.

2. Literature review

This paper examines two main issues. Firstly, the relationship between remittances and the level of migrants' skills, which has been studied in the migration literature and policy debates since the beginning of the 1970's. Secondly, the relationship between migrants' job security and the amount of remittances sent to origin countries is examined, and there in no research has been conducted on this subject in the migration literature.

It is important to specify the definition of remittances, skill level and job security, those which are commonly used in the literature.

2.1 Migrants' Remittances Definition and Data

The IMF's balance of payments is the principal source of aggregate remittances data. However, the official record of remittances flows published in the balance of payments in recipient countries usually underestimate the actual level of remittances. This is due to either imprecise accounting methods employed or the existence of informal channels for transferring remittances.

According to the IMF interpretation, remittances are recorded in three different sections of the balance of payments:

- Compensations of employees include the gross earnings of workers residing abroad for less than 12 months, including the value of in-kind benefits (denoted in the current account as subcategory "income").
- Workers' remittances are the value of monetary transfers sent home from workers residing abroad for more than one year (denoted in the current account as subcategory "current transfers").
- Migrants' transfers represent the net wealth of migrants who move from one country of employment to another (represented in the capital account as subcategory "capital transfers") (Reinke, 2007).

While the IMF categories are well defined, there are several problems associated with their implementation worldwide that can affect direct comparability. Some central banks (e.g. Central Bank of Philippines) record almost all migrants' remittances under "compensation of employees", even for migrants who are abroad for more than 12 months. Other central banks (e.g. the Czech National Bank and the Bulgarian National

Bank〉 do not record migrants' remittances separately, but added them together with other private transfers under "current transfers of other sectors" 〈IMF, 2009〉. Using the same mode of recording transactions in the balance of payments among the members of the IMF would lead to more realistic and comparable results for researchers.

In addition, many central banks do not separately record migrants' remittances in the capital account. Rather than using the data reported under the heading of migrants' remittances, researchers use different calculation methods. Since some calculate them as the sum of three components: compensation of employees, workers' remittances, and migrants' transfers. Others sum up just compensation of employees and workers' remittances 〈De Haas & Roald, 2006〉. Finally, Daianu 〈2001〉 proposes the computation of remittance credits as the sum of compensation of employees, workers' remittances, and other current transfers of other sectors.

However, the data has serious limitations and the estimates should be interpreted with caution. In some ways, the remittance flows calculated overestimate the real flows. Firstly, 'compensation of employees' represents the gross earnings of migrant workers that are partly spent in the host country and never remitted. Secondly, 'compensation of employees' includes income of non-migrants, e.g. local 〈home country〉 staff of foreign embassies and consulates, and international organisations, which are treated as extraterritorial entities. Thirdly, 'other current transfers of other sectors' include transfers that are difficult to distinguish from workers' remittances, e.g. aid, gifts, payments from unfounded pension plans from nongovernmental organizations 〈NGO〉, and even transfers from illicit activities. On the other hand, the same remittance flows can be seen as underestimated because they do not include transfers through informal channels, such as hand-carries by friends or family members, in-kind remittances of jewellery, clothes and other consumer goods(1) or through hawala(2) 〈Puri & Ritzema, 1999; El-Qorchi, Maimbo & Wilson, 2002〉. Also a portion of funds that migrants bring home in the form of cash or traveller's cheques which are then converted into local currencies at domestic banks is an issue. This clearly leads to an understatement of migrant remittances, as foreign currency converted into local currency is recorded as tourist expenditure in the balance of payments accounts. The use of informal means is encouraged by practical difficulties and the costs of sending money to developing countries. There is evidence that unrecorded remittances are likely to be quite significant; some economists indicate that unrecorded flows through informal channels, are believed to be at least 50% higher than recorded flows, while others suggest they range from 10% to 50% of total remittances, particularly for low-income migrants. The flow of unrecorded remittances is likely to be positively

correlated with the magnitude of illegal migration. Illegal migrants tend to frequently remit to their native country and are more likely to use informal transfer channels. This aspect is particularly important for the euro area as some countries experienced massive illegal migration (Schiopu & Siegfried, 2006).

2.2 Migrants Skill level

Some level of skill is required in almost jobs, skilled workers bring some degree of expertise to the performance of a given job. In addition to the general use of the term, various agencies or governments, both federal and local, may require skilled workers to meet additional specifications. Such definitions can affect matters such as immigration, licensure and eligibility for travel or residency. For example, according to U.S. Citizenship and Immigration Services, skilled workers positions are not seasonal or temporary, requiring at least two years of experience or training.

Skilled work varies in type (service versus labour), education requirements (apprenticeship versus graduate college) and availability (freelance versus on-call). Such differences are often reflected in titling, opportunity, responsibility and (most significantly) salary (Greenspan, 2007).

A skilled worker is defined as any worker who has some special skill or knowledge (usually acquired). A skilled worker may have attended a college, university or technical school or they may have learned their skills on the job (Joseph et al., 2000).

In general, individual skilled workers are more valued to a given company than individual non-skilled workers. As skilled workers tend to be more difficult to replace, they tend to demand more in the way of financial compensation because of their efforts. In addition, corporate managers are willing to bid up pay packages to acquire skilled workers, as the lack of skilled labour has been identified as one of today's greatest problems (Greenspan, 2007).

2.3 Migrants Job Security

The job security is the probability that an individual will keep his or her job, a job with a high level of job security means there is only a small chance of becoming unemployed. There are various factors which affect job security as job security is

dependent on economy, prevailing business conditions, and the individual's personal skills. It has been found that people have more job security in times of economic expansion and less in times of a recession. Also, some laws (such as the U.S. Civil Rights Act of 1964) bolster job security by making it illegal to fire employees for certain reasons. The unemployment rate is a good indicator of job security and the state of the economy and is tracked by economists, government officials, and banks (Alterman et al., 2013).

Typically, government jobs and jobs in education, healthcare and law enforcement are considered very secure while private sector jobs are generally believed to offer lower job security and it usually varies by industry, location, occupation and other factors.

Personal factors such as education, work experience, job functional area, work industry, work location among others play an important role in determining the need for an individual's services, and these factors impact on their personal job security. Since job security depends on having the necessary skills and experience that are in demand by employers, which in turn depends on the prevailing economic conditions and business environment, individuals whose services are in demand by employers will tend to enjoy higher job security (Clarck & Postel, 2005).

To some extent, job security also varies by the employment laws of each country. A workers' job security could be represented as range from temporary occupational status (no job security) to indefinite (virtually equivalent to 'tenure' in US universities but across the whole economy). However, job security depends on whether one is employable or not and if businesses have a need for these skills. So although employment laws can reduce unemployment risk, they only have a marginal contribution to job security of individuals. Fact is, individuals need to have the right skill set to have good job security (Emmenegger, 2010).

The impact of migrants' skills and migrants' job security on the amount of remittances will now be discussed in more detail. From a theoretical viewpoint, there are several factors which indicate if there will be differences between the remittance patterns of skilled migrants and unskilled migrants. As previously mentioned, many factors lead skilled migrants to remit more than unskilled migrants. First, skilled individuals are likely to earn more than unskilled migrants, thereby increasing the potential amount they can remit. Second, their education may have been funded by family members in their home country, with remittances providing a repayment of this family investment. Third, skilled migrants are less likely to be illegal migrants, and more likely to have

bank accounts, lowering the financial transactions costs of remitting. However, there are several factors which may lead skilled migrants being less likely to remit or to remit less. First, skilled migrants may be more likely to migrate with their entire household, so they may not have to send remittances to other household members. Second, they may come from wealthier households, who have less need for remittances. Third, they may be less likely to return to their home country, reducing the role of remittances as a way of maintaining prestige and ties to the home community. Based on this, it is not clear which direction will dominate, and thus whether overall the skilled migrant will remit more or less. However, there are many unresolved issues with this strand of literature. The evidence is equivocal, for instance Rodriguez and Horton ⟨1994⟩ showed that in the Philippines the migrants' education level doesn't affect the amount of remittances ⟨Rodriguez & Horton, 1994⟩.

Several studies discussed this issue at the macro level and others at the micro level. At the macro level Docquier et al.,⟨2011⟩ discuss the relationship between the amount of remittances and migrants' education level. They use a new database obtained by merging various second-hand sources on bilateral remittances for a large set of country-pairs over the period 1985–2005. Results suggest that immigration policies in the migrants' host country determine whether the home countries receive relatively more or less remittances from skilled emigrants.

On the other hand, the findings of Niimi et al., ⟨2010⟩ suggest that "remittances decrease with migrants' education level". While Faini ⟨2007⟩ shows that remittances decline with the proportion of skilled individuals among emigrants and conclude: "this result suggests that the negative impact of the brain drain cannot be counterbalanced by higher remittances". However, any correlation between remittances and the skill level observed across countries may be spurious. These findings of Niimi et al., ⟨2010⟩ and Faini ⟨2007⟩ deny the claim that the negative impact for sending countries of skilled relative to unskilled labour migration is mitigated or even offset by the fact that skilled migrants remit more than unskilled ones is not supported by the evidence.

At the micro level, Collier et al., ⟨2011⟩ using the same data set of this paper in order to analyse the determinants of the amount of remittances in Maghreb countries ⟨Morocco, Algeria, and Tunisia⟩, and find that no evidence of any impact of education on the level of remittances. Bollard et al., ⟨2011⟩ estimate the relationship between the amount of remittances and migrants' education level, using household survey data on 33,000 migrants

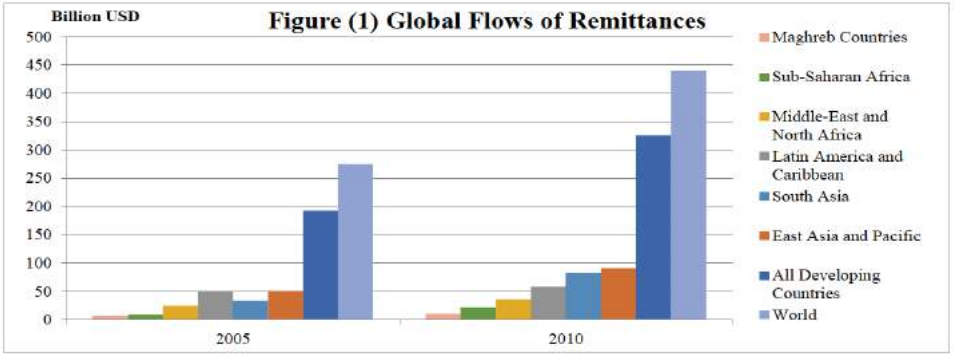
in 11 OECD destination countries. They find a mixed pattern between higher education and the likelihood of remitting, and a strong positive relationship between higher education level and the amount remitted conditional on remitting. Combining these intensive and extensive margins gives an overall positive effect of higher education on the amount remitted; for a migrant with a university degree the expected amount is approximately $1000 annually and $750 for someone a without university degree. In relative terms, however, the surveys containing information on income suggest that the less educated tend to remit a larger share of their income. Bollard et al., (2011) also investigate why the more educated send higher remittances and find that higher income is more important than characteristics of their family situation or their return intentions. This is explained as high skilled migrants work better jobs and earn more money than low skilled migrants, and in turn, send more money back home in remittance flows. This suggests that sending highly skilled migrants who are able to earn higher income is one way to increase remittance flows. Duval and Wolff (2010) using longitudinal survey data on remittances to Albania find an inverse relationship between remittances and both the migrants and recipients' level of education. Dustmann and Mestres (2010) using different ways of the German Socio-Economic Panel, find a negative effect between education level and the amount of remittances, taking into account the household composition at destination country and the propensity to return.

This study examines also the relationship between migrants' job security core and the amount of remittances. We expect that migrants will remit more if they have a high job security. Even if we assume theoretically that a high job security may be associated with high skill level, the available data provides an opportunity to estimate the relationship between migrants' job security and the amount of remittances they send to their origin country.

3. Trends of Remittances inflows to the Maghreb countries

Globally remittances contribute to the financial and social inclusion of needy people worldwide and to the economic growth of a country. In recent years, the World Bank estimated that Latin America and the Caribbean are the main recipient areas of remittances in the world, receiving about (31%) of total flows. The second-largest recipient for remittances is South Asia (20%) followed by the Middle East and North Africa (18%), East Asia and the pacific (14%), Europe and Central Asia (13%) and Southern Africa (5%). During the years 2005 to 2010, the worldwide flow of remittances almost doubled (from $275 billion to $440 billion). Figure (1)[3], highlights a similar trend for developing countries (from $192 billion to $325 billion).

The main destination region of the migration flows from Maghreb is to Western Europe, followed by the oil producing Arab countries. For historical reasons and the post-colonial period, France has attracted the majority of the Maghreb community abroad, followed by Spain and Italy. The OECD reports that France received a flow of 22,315 Algerians, 19,214 Moroccan and 7,854 Tunisians in 2008 while Spain received a higher flow of migrants from Morocco (93,623) in the same period.



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In general, poverty, unemployment and political instability in the region can be identified as the main causes of the decision to migrate to another country. Migration of unskilled and semiskilled workers from a rural origin has dominated the flow to Europe. However, skilled emigrants from North Africa have grown significantly over the past two decades. Information regarding the total number of expatriates, as well as the proportion of highly-skilled migrants provided by origin countries, do not always correspond to the statistics available in the receiving countries. More recently, Docquier et al. (2006) have developed a dataset that highlights worldwide migrants' skill levels in the OECD. Looking at the skilled migration rate of the Maghreb region in 2000, Morocco has almost 20% of its skilled workforce living abroad, with Tunisia around 13% and Algeria almost 10%. It is not clear if this phenomenon reflects a change in migration selectivity or is simply the consequence of a general improvement in the level of education in origin countries. The World Bank (2005) highlights that the reasons behind the departure of educated individuals do not depend solely on wage differentials between Maghreb and Europe. Labour market conditions including relative unemployment, industry structure and career opportunities for the highly skilled are also considered to be important.

In the Central Maghreb, remittance flows vary from one country to another. In 2010, Morocco received $7 billion, while Tunisia and Algeria each received approximately $2 billion. These remittances account for 8% of Morocco's GDP in 2010, 5% of Tunisia's

GDP and slightly over 1% of Algeria's GDP. Flow volumes have been increasing in all three countries. Annual growth from 2005 to 2010 averaged $90 million in Algeria, $145 million in Tunisia and $656 million in Morocco. Remittances certainly provide more resources than foreign direct investment or official development assistance, even in Algeria, as shown in Table 3.

Table〈1〉: Top Remittances-Receiving Countries 2005 – 2010 US $ Billions[1]

2005		2010		Percentage change 2005 over 2010 of the same rank
Country	Remittances US $ Billions	Country	Remittances US $ Billions	
China	23.48	India	55.0	134.2%
Mexico	22.74	China	51.0	124.3%
India	22.13	Mexico	22.6	2.1%
France	11.95	Philippines	21.3	78.2%
Philippines	13.57	France	15.9	17.2%
Spain	7.97	Germany	11.6	45.5%
Belgium	7.24	Bangladesh	11.1	53.3%
Germany	6.95	Belgium	10.4	49.6%
United Kingdom	6.34	Spain	10.2	60.9%
Morocco	4.59	Nigeria	10	117.9%

Source: IMF, Balance of Payments Statistics Yearbook, various issues.

The top three recipients of remittances in 2005 were China, Mexico and India, while in 2010 Indian remittances increased resulting in the first three ranks changing to India, China and Mexico. In 2005, United Kingdom and Morocco were in the top 10 remittances receiving countries, replaced by Bangladesh and Nigeria in 2010〈see Table 1〉.

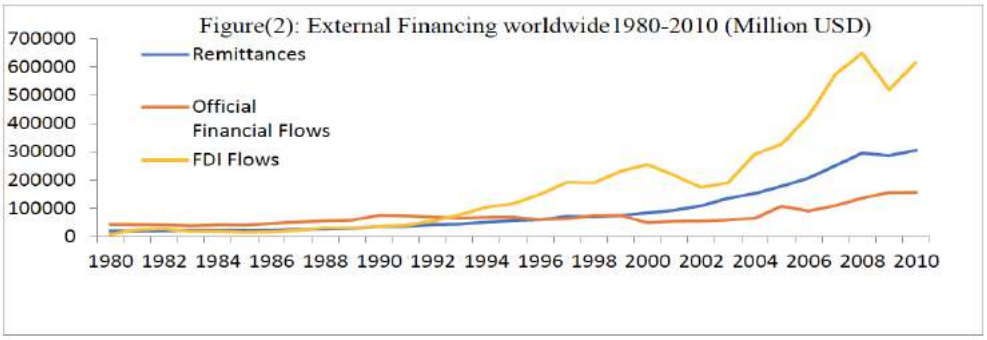
Table (2): Top Remittances-Receiving Countries Percentage of GDP 2005 - 2010

2005		2010	
Country	Remittances as percent of GDP	Country	Remittances as percent of GDP
Tonga	31.6	Tajikistan	35.0
Moldova	27.4	Tonga	28.2
Lesotho	25.5	Lesotho	25.3
Haiti	25.0	Moldova	23.5
Bosnia & Herzegovina	22.5	Nepal	23.1
Jordan	20.0	Lebanon	22.8
Jamaica	17.5	Samoa	22.3
Serbia & Montenegro	17.48	Honduras	19.2
El Salvador	15.2	Guyana	17.4
Honduras	15	El Salvador	16.1

Source: IMF, Balance of Payments Statistics Yearbook, various issues.

However, smaller countries such as Tonga, Moldova, and Lesotho, are topping the list in 2005 when controlling for the amount of remittances as a share of GDP. On average, the share of remittances in GDP is twice as large in low-income countries than in middle-income countries. In 2010, Tajikistan owned the highest share of remittances in GDP with (35%), followed by Tonga and Lesotho. Also in Nepal, Lebanon and Samoa remittances as percentage of GDP have grown rapidly during 2005-2010 (see Table 2).

In recent years, remittances are more than double the amount of net official flows and have become a major source of external development finance. Moreover they are second only to FDI as a source of external finance for developing countries Figure (2). In 36 out of 153 developing countries, remittances are larger than all capital flows in 2010 (Fact book, 2011).



Source: UNCTAD statistics, 2012.

Remittances are stable and may even tend to be counter-cyclical in times of economic hardship, since the remittances play an important role during financial crises. Indeed, remittance flows to developing countries proved to be resilient during the recent global financial crisis; falling only 5.5 % in 2009 and registered a quick recovery in 2010. By contrast, there was a decline of 20% in FDI flows in 2009. While capital flows tend to rise during upswings of economic cycles and decline in bad times, remittances tend to be counter-cyclical relative to recipient countries' economies(see Figure 2). They tend to rise when the recipient country suffers an economic downturn following a financial crisis, natural disaster; or political conflict, as migrants transfer more funds during hard times to help their families and friends.

While in the Maghreb countries as shown in Table 3, the trend of remittance flows (REMIT) to Morocco, Tunisia and Algeria, highlights their size and stability compared with (FDI) and Official Development Assistance (ODA). Maghreb countries have recorded positive net inflows over the period under review. Table 3 also highlights the strategic nature of money transfers to Morocco and Tunisia. Both countries (especially Morocco) have specific policies in place to encourage and stabilise remittances for their diaspora. Nevertheless, as Algeria is an oil exporter and due to recent development policies, it is noted that remittances don't exceed the FDI in 2010, despite exceeding the FDI in 2005.

Table (3): External Financing in Maghreb countries 2005 & 2010 (Millions US dollars

	2005			2010		
	Morocco	Algeria	Tunisia	Morocco	Algeria	Tunisia
Remittances	4591	1744	1250	6906	2031	1979
FDI	2298	682	581	2374	2699	2763
ODA	645	311	299	1121	389	501

Source: UNCTAD statistics, 2012.

Remittances could also help in reducing poverty, as it may be the poor who migrate and send money to their families. Remittances directly augment the income of recipient households. In addition to providing financial resources for poor households, they affect poverty and welfare through indirect multiplier effects and also macroeconomic effects. These flows typically do not suffer from the governance problems that may be associated with official aid flows. Regression analysis across countries worldwide shows the significant effect of remittances on poverty: A 10% increase in per capita official

remittances, may lead to a 3.5% decline in the share of poor people. Recent research indicates that remittances reduced poverty in sub–Saharan Africa and Latin America, although effects vary across countries. Household survey data shows that remittances have reduced the poverty headcount ratio (per cent of population below the national poverty line) significantly in several low income countries by 11 percentage points in Uganda, 6 percentage points in Bangladesh and 5 in Ghana. In Nepal, remittances may explain a quarter to a half of the 11 percentage–point reduction in the poverty headcount rate over the past decade (in the face of a difficult political and economic situation).

The analysis of the poverty impact of remittances must take into account the loss of income that the migrant may experience due to migration (for example, if the migrant has to give up his or her job). Such losses are likely to be small for the poor and unemployed but large for the middle and upper income classes. It has been noted that very poor migrants may not be able to send remittances in the initial years after their migration (Ratha, 2007). Remittances could also be used to promote literacy. Studies show that the school dropout rate is lower and enrolment rate is higher in households that receive remittances. There is tremendous potential for using remittances to encourage development in countries. Remittances could increase when the home country's economy is going through a difficult period. During such times, an individual might prefer to remit more to aid his family's consumption back home. The money sent home could also be used to promote economic growth, increased investment and community development (Mohapatra et al.,2010).

4. Data and descriptive statistics

The data used in this study were drawn from a survey carried out by the MIREM project on a sample of the returnees in the Maghreb countries(4). This survey aims at taking into consideration the challenges linked to return migration, as well as its impact on development. A whole set of analytical tools have been produced to shed light on the socio demographic characteristics, conditions and patterns of reintegration of return migrants to the Maghreb countries (Algeria, Morocco, and Tunisia). The survey aims to provide data on the various factors shaping returnees' patterns of reintegration in the Maghreb countries. It aims to highlight the heterogeneity characterising the categories of returnees while analyzing their respective needs in their country of origin. The data which are collected in this survey incorporate the following definition of returnees; "Any person returning to his/her country of origin, in the course of the last ten years, after having been an international migrant (whether short–term or long–term) in another country. Return may be permanent or temporary. It may be independently decided by the migrant or forced by unexpected circumstances(5)".

A potential disadvantage of the dataset is that the respondents on questionnaire are returnees, that may lead to a doubt in the data they gave, due to the part of time they spent in their origin country after returned from migration country.

The field survey, based on a common questionnaire completed by 992 return migrants (330 from Morocco, 332 from Algeria, and 330 from Tunisia), began at the same time in the three target countries, from September 2006 and ended in January 2007. The questionnaire for this survey was administered directly with the respondents and interrelated three migratory stages structure. First, the returnees' conditions and characteristics before they left their home country, including their demographic, social, family composition, education level and skills. Second, the returnees' experience of migration and living abroad, considering the experience acquired abroad, the amount and the reasons of remittances they send to their home country, and the duration in the host country. Third the returnees' post-return conditions in the country of origin.

Table (4) indicates that approximately 69% of all migrants sent remittances regularly or at least 'occasionally' to their home country. The majority of migrants interviewed remitted annually, with approximately 78% and 77% in Tunisia and Morocco respectively, while Algerian migrants remitted 44.5% per year. Indeed, Algerian migrants report the highest percentage in the category of no transfers (45.5%).

Table (4): The Amount of Migrants' Remittances Per Year

	Morocco		Algeria		Tunisia		Total	
	Freq.	percentage	Freq.	percentage	Freq.	percentage	Freq.	Percentage
Don't remit	46	21.8	138	45.5	60	22.1	244	31.1
Less than 200 Euros	28	13.3	23	7.4	33	12.3	84	10.7
From 201 to 500 Euros	46	21.8	43	14.3	73	26.9	162	20.6
From 501 to 1000	38	18.0	35	11.6	35	12.9	108	13.8
More than 1001	53	25.1	64	21.2	70	25.8	187	23.8
Total	211	100	303	100	271	100	785	100

Of those who remitted, around 67% reported transferring money to family members in their home country. Several reasons encourage migrants to remit. For instance, 87% of migrants mentioned that they remitted to support the family for survival reasons. Remittances to invest in a business project or for the financing of children's education are also reported as being important, Table (5).

In this paper we measure the migrant's skill level according to their education level, so this survey information regarding migrants' level of education is provided prior to the migration experience.

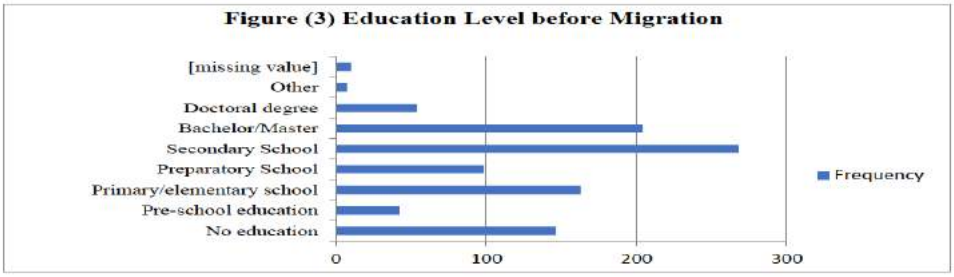
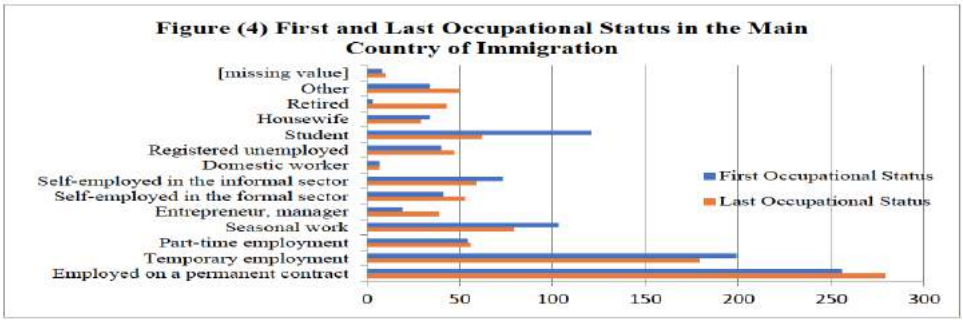


Table 〈5〉 shows that approximately 27% of respondents are skilled because they hold a university degree. Most return-migrants were relatively well educated prior to migration with 38% having completed secondary school certificate 〈see Figure 〈3〉〉. Approximately 15% of respondents had no qualification at the time of migration.



This survey provides data on the first occupational status and the last occupational status of the migrant in the host country. This data is used to measure the migrant's job security, which is the other main issue of this paper. Figure 〈4〉 reveals that migrants who were employed on a permanent contract, part-time employment and self-employed in the formal sector are increased as well as entrepreneur, manager, and unemployed migrants. Conversely, the migrants who work seasonally, temporary employment and self-employed in the informal sector are decreased.

The sample of migrants interviewed in this survey are predominantly male 87%, with a mean age of 45.6 years. Around 64% lived in an urban area in their country of origin before migration. A total of 29% of migrants travelled to the host country accompanied with their family members. In addition, there is an important variable summarised in Table 〈5〉, which represents whether the migrant has received a vocational training in

the host country or not. Summary statistics are presented in Table 〈5〉.

Table (5): Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Remittances per year (Interval data)2	646	2.719	1.091	1	4
Skill level (holding a university degree)	982	0.268	0.443	0	1
Vocational training received in the host country	965	0.180	0.384	0	1
Duration of migration in years (proxy of work experience)	872	14.102	12.921	1	49
Job security (has a permanent contract before returning to home country)	979	0.124	0.330	0	1
Remit to invest in a business project	658	0.130	0.337	0	1
Remit to support family consumption	660	0.871	0.335	0	1
Remit for finance children's education	660	0.287	0.453	0	1
Remit to buy or build a house	658	0.370	0.483	0	1
Remit to buy a land	659	0.086	0.281	0	1
Remit to improve own agricultural activity	658	0.027	0.163	0	1
Age	989	45.67	14.37	17	88
Age square	989	2292.7	1414.1	289	7744
Gender (Male=1)	992	0.8739	0.332	0	1
Number of foreign languages spoken before migration	971	1.384	0.841	0	4
The existence of family members in the host country	979	0.292	0.454	0	1
Country of origin: Morocco	992	0.332	0.471	0	1
Country of origin: Algeria	992	0.334	0.472	0	1
Household size in the home country	913	5.929	3.527	1	12
Owning house in the origin country	955	0.596	0.490	0	1
Owning land in the origin country	977	0.362	0.480	0	1
Residence of migrant area before migration (urban=1)	989	0.646	0.478	0	1

5. Econometric Model

This paper aims to study empirically the relationship between the amount of remittances, migrants' skill level and migrants' job security. The ordered logistic regression method was employed to estimate the parameters of the model, which is an appropriate method in situations such as this, where the dependent variable is an ordinal variable〈6〉. An ordered logistic model and for an ordinal response with C categories is

defined by a set of equations where the cumulative probabilities are related to a linear predictor through the logistic function:

$$logit(g_{ci}) = \log\left(\frac{g_{ci}}{1-g_{ci}}\right) = \alpha_c - \beta x_i\,, \qquad c = 1,2,\ldots,C-1$$

Which in our case is:

$$\begin{aligned} R_i = {} & \beta_0 skild_i + \beta_1 voctraing_i + \beta_2 dura_i + \beta_3 jobsec_i + \beta_4 invsproj + \beta_5 supfmly \\ & + \beta_6 childedu + \beta_7 buldhus + \beta_8 buylnd + \beta_9 agriceqip + \beta_{10} age_i \\ & + \beta_{11} agesqur + \beta_{12} gend_i + \beta_{13} fn.lang_i + \beta_{14} Fam.host + \beta_{15} morocc \\ & + \beta_{16} Algr + \beta_{17} HH_i + \beta_{18} hous.sit_i + \beta_{19} ow.lad_i + \beta_{20} Urb_{ii} + \varepsilon_i \end{aligned}$$

Where:

R_i denotes the remittances of migrant i per year, we would measure its response to the changes in migrants' skill level and migrants' job security. This variable in the MIREM data is reported as interval data ranging from less than €200 to more than €1000 ⟨see Table 5⟩. Interval data presents a problem when utilised as a dependent variable, since the OLS method requires specific values, and doesn't process the data in ranges. Hence it was necessary to input values within the range to all returnees in that range, that specific value could giving by random value within the range or by giving the range's mean value to all returnee in that range. Both of these methods were employed in order to be sure whether there were significant differences or not. However, we have opted for ordered logistic regression method could be used to estimate the parameters of the model, since it is more convenient with interval data.

skild$_i$ indicates to the skill level of migrant i before migration, this variable is converted as a dummy variable; skilled and unskilled migrants. The most part of the empirical literature on immigrants measures a migrant's skill level according to his/her education level. Thus a migrant is counted as skilled if they hold a university degree or higher[7], and as unskilled if their education level is less than university degree. Table ⟨5⟩ presents summary statistics for skilled and unskilled migrants in the survey. Overall, 26.88% of the migrants in our database have completed a university degree. Figure ⟨3⟩ summarises the education levels with frequencies in the survey, which indicates that almost all of the respondents passed secondary school.

Voctraing denotes whether the migrant has received a vocational training in their host country or not. We tried to find data on whether the migrant received any vocational

training in their origin country, but the survey only provides data on training status in the host country.

dura$_i$ denotes the duration in years in the host country. The longer the duration of stay in the host country the greater the migrant's opportunity to understand the potential jobs available. As time passes the fixed cost of settlement (home, transport, etc) decreases and the experience and skills gained may lead migrants to earn more. These factors may increase the ability to remit more to the origin country, based on the assumption that temporary migrants keep stronger ties with their home country (family, friends, business, etc) during the period spent abroad.

Jobsec : measures the job security effect. Since the migrant has good occupational status if their job security is high, the remittances' pattern should be more stable when migrants' job security is higher. The data about this variable (jobsec) is calculated from the survey, using migrants' occupational status when on arrival to the host country and their occupational status before they returned to the origin country Table (5). The survey provides data on first occupational status and last occupational status, varying by 12 categories from permanent contract, which represent the highest job security to seasonal employment, which represents the lowest job security (see Figure 4). A dummy variable will be employed where the migrant has a high job security and equals one if they have a permanent contract in their first or last occupational status. And the job security equals zero in the case of other occupational status.

Invsproj, supfmly, childedu, buldhus, buylnd, agriceqip denote the reasons migrants remitted, and are dummy variables. **Invsproj** denotes the migrants who remit to their origin country to invest in a business project; around 13% of the migrants remit for this reason. While **supfmly** indicates migrants who remit to support their family in the origin country, and they constitute about 87% of the migrants who remit to their origin country. **Childedu** represents the migrants who remit in order to finance children's education, and this represents 29% of the migrants in the dataset. **Buldhus** indicates migrants who remit to their origin country to build or buy a house. **Buylnd** indicate migrants who remit to buy land in the origin country. **Agriceqip** denote migrants who remit to improve their agricultural activities. The last reason mentioned in the survey for migrants who remit in order to construct public buildings, which is considered as the reference category over all the reasons.

age$_i$ represents the age of migrant i at the time of the survey.

gend$_i$ is the sex of migrant. At the global level, female migrants send approximately the same amount of remittances as male migrants. However, research suggests that men tend to send a lower proportion of their income, even though they generally earn more than women. Females usually send money more regularly and for longer periods of time ⟨International Organization for Migration, 2007⟩. By sending smaller sums of money more often, women tend to spend more on transfer fees. Therefore, reducing transfer fees and making different transfer options accessible would benefit maximise the positive impact of remittances on their families. In the dataset used in this paper, the proportion of females is 12.6%, distributed between the three countries Morocco, Tunisia, and Algeria.

fn.lang$_i$ represents the foreign language migrant can speak before migration. Migrants who have foreign languages have an advantage to obtain a work and earn more; especially if they speak the language of the destination country. In the dataset, approximately 87% of migrants speak between one and four foreign languages, as shown in Table ⟨5⟩.

Fam.host indicates whether family members accompanied the migrant to the host country or not. This factor may affect the amount of remittances sent to the origin country and it is anticipated that there will be a negative relationship.

Morocc, Algr indicate to origin country migrants came from. These variables are dummy variables, which are used in the model to check if the origin countries' characteristic influence the amount of remittances that are sent.

HH$_i$ indicates to household size of migrants before migration, this variable may influence the amount of remittances as migrants are supposed to remit more if their family size is larger. Table ⟨5⟩ shows that the maximum family size in this survey is12, and the minimum family size is one, the family size excludes the migrant.

house.sit$_i$ indicates the housing situation of the migrant i before migration. A migrant who owns a house in the origin country may be wealthier and therefore, more likely to remit to their family.

ow.lad$_i$ family own land or not before migration, if the family own land that would influence remittances pattern, usually wealthier families own land, therefore this variable

may negatively affect the amount of remittances.

Urb$_i$ indicates the residence area of the migrant before migration as rural or urban, it's a dummy variable where urban=1 and rural=0.

6. Estimation results

The estimation results are reported in Table 〈6〉. Column 〈2〉 reveals the results estimated to measure the impact of migrants' skill level on the amount of remittances, without vocational training variable and job security. Contrary to expectations, skills level is not found to influence the amount of remittances, where the probability is statistically insignificant, even in the other columns when vocational training and job security were added in column 〈3〉 and 〈4〉. Here there is no relationship found between migrants' education level and the amount of remittances. It could be that because the output of education system in Maghreb countries is not qualified to work in the labour market of host countries. So these results differ from the findings of most previous studies which suggest a negative or positive relationship between migrants' skill level and the amount of remittances.

An interesting result in Table 〈6〉 concerns the duration of the migration experience. Contrary to our expectations, which suggest that spending a longer time in the host country, leads to a lower fixed costs of migration, and migrants gain more experience in their field, which will positively affect the amount remitted to the origin country. But our results reveal that is not true.

Column 〈3〉 in Table 〈6〉 shows that receiving a vocational training in the host country affects the amount of remittances. Yet it is an unexpected negative relationship, where our results reveal that migrants who have received a vocational training do not have a propensity to remit. While it was expected that those who received a vocational training would have increased opportunities in the labour market, resulting in the ability to earn more and thus remit more.

This paper aims also to discover the impact of migrants' job security score on the amount of remittances, which is a relatively new concept in the remittances and migration literature, with expectations that there will be positive relationship between these variables. Our results in Table 〈6〉 are in line with our expectations that there is a positive relationship between these two variables. The findings reveal that the migrant who has a higher job security wants to remit more.

The estimation results show that the reasons for remitting have varying effects on the amount of remittances. This study suggests that migrants will remit more in order to invest in a business project, or to support the family or for finance children's education. In addition, those who invest money in their home country are 13% more likely to remit than those who have not invested. Also the migrant who remits to buy or build a house is considered as one of the main reasons to remit. These results are similar to those of Mesnard's (2000) study on temporary migration and capital market imperfection, which suggests the need to overcome credit constraints facing people in their home country leads them to migrate, and the intention to realise some projects on their return leads to a higher probability of remitting. Collier et al., (2011) suggest that migrants who invest money in at least one business project, remits more than those who remit money for children's education. This factor is considered to be one of the main determinants which influences the amount of remittances.

The existing literature suggests that there is a positive relationship between household size in the origin country and the probability of remitting. This relationship is insignificant in our results. Our results reveal a negative relationship between the amount of remittances and age. The results also reveal that gender influences the amount of remittances, so female migrants transfer less than their male counterparts. These results are similar to the findings of the previous studies, which suggest that female migrants remit less than men. Several studies explain it as a result of job opportunities in the labour market, unpaid work, and the differences in wage rates.

Table (6): Ordered Logistic Regression Model of Remittances: Results

Independent Variables	Dependent Variable: Remittances		
Skill and Job Security			
Skill level (holding a university degree)[3]	0.023 (0.09)	0.073 (0.3)	0.110 (0.46)
Vocational training received in the host country	--------	-0.351 (-1.66)*	-0.361 (-1.70)*
Duration of migration in years (proxy of (work experience	-0.053 (-1.75)*	-0.053 (-1.72)*	-0.060 (-1.95)**
Job security (has a permanent contract (before returning to home country	--------	--------	0.494 (1.99)**
Motives for Remitting (Ref: remit to (construct public building			
Remit to invest in a business project	1.269 (4.32)***	1.321 (4.46)***	1.311 (4.42)***
Remit to support family consumption	-0.110 (-0.41)	-0.168 (-0.62)	-0.111 (-0.41)
Remit for financing children's education	0.852 (4.2)***	0.847 (4.14)***	0.858 (4.19)***
Remit to buy or build a house	0.706 (3.72)***	0.686 (3.58)***	0.683 (3.56)***
Remit to buy a land	0.264 (0.82)	0.260 (0.80)	0.265 (0.82)
Remit to improve own agricultural activity	-0.020 (-0.03)	0.077 (0.11)	0.071 (0.10)
Migrant's Characteristics			
Age	-0.084 (-1.82)**	-0.077 (-1.65) *	-0.082 (-1.74)*
Age square	0.001 (1.92)**	0.001 (1.79)*	0.001 (1.86)**
(Gender (Male=1	0.891 (2.85)***	0.957 (3.03)***	0.969 (3.05)***
Number of foreign languages spoken before migration	0.058 (0,47)	0.056 (0.45)	0.032 (0.25)
The existence of family members in the host country	0.113 (0.58)	0.137 (0.69)	0.131 (0.66)
(Country of origin: Morocco (Ref; Tunisia	0.307 (1.43)	0.333 (1.53)	0.310 (1.43)
(Country of origin: Algeria (Ref; Tunisia	0.322 (1.53)	0.332 (1.56)	0.335 (1.57)
Situation before migration			
Household size	-0.010 (-0.41)	-0.011 (-0.44)	-0.010 (-.044)
Owning house	-0.119 (-0.61)	-0.136 (-0.68)	-0.010 (-0.80)
Owning land	-0.200 (-1.06)	-0.218 (-1.14)	-0.240 (-1.25)
Residence of migrant area: Urban	-0.010 (-0.05)	-0.016 (-0.08)	-0.002 (-0.01)
Number of observations Pseudo R^2	527 0.055	522 0.059	520 0.061

Notes: z-statistics are reported in parenthesis.

* Significant at the 10% level. ** Significant at the 5% level. *** Significant at the 1% level.

The following results were contrary to expectations in that they had no impact on the amount of remittances: foreign language, owning a house, owning land, migrants' area before migration (rural or urban), the country of origin of the migrant (Morocco, Algeria, and Tunisia), and family members in the host country. For instance we expected to find a negative impact of the members of family abroad with the migrant on the amount of remittances, while the results reveal that there is no relationship.

7. Conclusion

This paper aims at measure the impact of migrants' skill level and migrants' job security on the amount of remittances sent to their origin country. In order to examine this in more detail, a dataset of returned–migrants from the Maghreb region carried out by the MIREM project was used, which provides information on the amount of remittances in interval data. Ordered logistic regression was deemed the most appropriate method to apply in the econometric section of this paper. Our results reveal that migrant's skill level does not affect remittance behavior. These results are confirmed by Collier et al., (2011) which suggests that migrant's education level doesn't influence remittances. Other studies suggest a positive and negative impact of migrant's skill level on the amount of remittances. To our knowledge, all these studies used education level to measure the skills level of the migrant.

Results reveal that migrants who have received vocational training in their host country remit less than those who didn't receive this training. It seems that only skills acquired in the host country with vocational training are significant, and it is negatively impact on remittances. So, if there is an impact of skill level on remittances, this impact reduces the remittances.

The results show that migrants' job security positively affects the amount of remittances. Thus, migrants in the Maghreb countries will remit to the origin country depending on their occupational status and if their job security is higher.

The most significant reasons linked with remittances include investing in a business project, financing children's education and buying or building a house. Hence, migrants are more likely to remit more if one of these three reasons is present The most significant reasons linked with remittances include investing in a business project, financing children's education and buying or building a house. Hence, migrants are more likely to remit more if one of these three reasons is present.

Footnotes

〈1〉 If and when they are recorded, it is not clear to what extent they reflect actual transfers rather than imports. For example, in recent years, India has started registering the gold brought by incoming international passengers as imports, although previously this was classified as remittances 〈Ratha, 2003〉.

〈2〉 Hawala: is a wide-spread informal remittance system. The worker transfers a sum in foreign currency to an agent overseas under the agreement that the local currency equivalent determined at an agreed exchange rate 〈which is usually set above the official exchange rate〉 is transferred by the agent's local counterpart to the migrant's family.

〈3〉 Two years were used for comparison between the latest year for which official remittances data is available 〈2010〉, and the official remittances data in 2005.

〈4〉 Note: All numbers are in current 〈nominal〉 US $.

〈5〉 MIREM: This collective research program was launched in December 2005 and ended in December 2008. Today, MIREM and its deliverables 〈publications, statistics and field surveys on return migrants, conferences and seminars〉 are part of the Return Migration and Development Platform RDP.

〈6〉http://rsc.eui.eu/RDP/research-projects/mirem/survey-on-return-migrants/methodology/

〈7〉 As mentioned in the descriptive statistics, the data of migrants' remittances are reported as interval data ranging from less than 200 euro to more than 1000 euro per year.

〈8〉 We employed the OLS regression method, using the remittances variable as a mean values and as a random values as mentioned in the previous section. Also the two categories were used for measuring whether the migrant is skilled or unskilled according to the education level. But all the estimation results were statistically insignificant.

〈9〉In this paper we have used both measures, in order to estimate the best results for the model.

〈10〉 Table 〈6〉 shows the estimation results measuring migrants' skill level according to university degree, while we ignored it regarding to the secondary school because it gives the same results.

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