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ATTITUDE TOWARDS INCENTIVES FOR BLOOD DONATION IN EUROPE

A Master's Thesis

Yvonne ISHIMWE

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To

Almighty God,

My parents, M. Gasinzigwa and D. Mujawiyera

My siblings Adolphe, Philbert, Norbert and Bonnette

ATTITUDE TOWARDS INCENTIVES FOR BLOOD DONATION IN EUROPE

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I certify that I have read this thesis and have found that it is fully adequate, in scope and quality as thesis for the degree of Master of Arts in Economics.

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ABSTRACT

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Obviously there are many factors which motivate blood donors during the donation process. Materials incentives can be a policy tool for increasing blood donor recruitment. To shed more light on factors that affect blood donation, we analyze Euro-barometer survey (82.2) which conducted in October 2014 with 27868 individuals in EU counties. This thesis demonstrates how selected material incentives especially monetary incentives are perceived generally among European individuals. Thus, we examine monetary incentives' encouragement, discouragement or make no difference towards blood donation within demographic groups (Gender, education, and marital status), social economics variables (occupation, community and household), wealth index (ownership durables), GDP per capita and blood donation sites (Countries). We find that the rate of individuals who don't accept cash payment for blood donation in 28 EU countries is above 15%, except individuals who located in Czech Republic, Latvia and Romania. For people who have higher scores on wealth index are less likely to accept cash incentives for blood donation. In addition GDP per capita of each country of EU is statistically significant determinant of attitude towards blood donation. That is, in high GDP per capita countries, potential donors' interest in monetary incentives falls.

Keywords: Monetary incentives, altruism, blood donation

ÖZET

AVRUPA'DA KAN BAĞIŞINA YÖNELIK TEŞVIKLER KONUSUNDAKI TUTUM

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Yüksek lisans, Ekonomi bölümü

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Kan donörlerini kan bağışına sevk eden bir çok faktör var olduğu aşikardır. Maddi teşvikler de donörleri artırmak için kullanılacak bir politika aracı olabilir. Kan bağışını etkileyen faktörlere ışık tutmak için, 2014 yılı Ekim ayında 27,868 kişiyle Avrupa Birliği üye ve aday ülkelerinde yapılan Euro-barometer (82.2) anketini kullandık. Bu tez, maddi teşviklerin özellikle parasal teşviklerin Avrupa toplumu içinde nasıl algılandığını göstermektedir. Özellikle, parasal teşvik kullanımının potensiyel kan bağışçısı olabilecek kişilerin demografik gruplarına göre (cinsiyet, eğitim düzeyi, medeni durum), sosyo-ekonomik düzeyine (kişinin mesleği, yaşadığı yerin kırsallık durumu, hanehalkı durumu) göre, maddi refah endeksine (çeşitli dayanıklı mallara sahiblik) göre ve ülkelerin kişi başına düşen gayri safi yurtiçi hasılı miktarına bağlı olarak teşvik edici bir unsur mu olduğu, yoksa kan bağışından uzaklaştırıp uzaklaştırmadığı ve herhangi bir etkisinin olup olmadığı incelenmiştir. Çek cumhuriyeti, Latviya ve Romanya hariç çalışma kapsamındaki AB ülkelerinde kan bağışı için para ödenmesini kabul etmeyenler %15'in üzerinde. Maddi refah endeksinde yüksek puan sahibi olan kişilerin de kan bağışı için parasal teşvikleri kabul etme ihtimalleri daha düşüktür. Buna ek olarak, ülkerin kişi başına düşen gayri safi yurtiçi hasıla miktarları da kan bağışına yaklaşımları için önemli bir açıklayıcı değişken olarak bulunmuştur. Bir başka ifade ile, kişi başına düşen gayri safi yurtiçi hasılanın yüksek olduğu ülkelerde potansiyel donörlerin parasal teşviklere ilgisi azalmaktadır.

Anahtar Kelimeler: Parasal teşvikler, özgecilik, Kan bağışını

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ACRONYMS AND ABBREVIATION

GDP: Gross Domestic Products

WHO: World Health Organization

EU: European Union

NHS: National Health Service

ARC: American Red Cross

VNRBD: Voluntary Non-Remunerated Blood Donation

STATA: Statistical Software Package

DVD: Digital Video Disc

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1. INTRODUCTION

1.1. Background

Nowadays, there are many simple ways that we can use to save people's life and blood donation is one of those simple ways. The human body needs blood for various reasons for example, when someone suffers from anemia has undergone a surgical operation or an accident may result into the need for blood transfusion. Some patients may die due to lack of enough blood during the situation mentioned above among others (anemia, surgical operation and accident). During maternal birth, women need blood in case of emergency situation (Nguyen, DaVita, & Hirschler, 2008) [1].

Therefore, blood donation is an important act that every healthy individual should contribute towards in order to save lives in the community when necessary (Steele, Schreiber, & Guiltinan, 2008) [3]. The body can regenerate 450 ml of fresh blood, the fluids and white cells in a period of 24 hours and platelets and plasma within 48-72 hours. In general the red blood cells are successfully regenerated within 4-6 weeks. It is not harmful for an adult to donate blood (Wales, Lau, & Kim, 2001) [2].

As technology improves, blood donation in developed countries use voluntary, non-remuneration system rather than using incentives, a step taken by most European Union countries (McCarthy, 2007) [4]. All blood recipients in this region are provided with safe blood products obtained from voluntary unpaid blood donation (Lancet, 2005) [5].

Even though majority of the European Union countries' is highly educated, they still lack enough knowledge about how to donate blood without receiving any reward or any kind of incentives (Jeffrey, 2012) [6]. Blood donation incentives may include; physical check up, free testing, medical treatment, travel-cost reimbursement, blood credits, merchandise discount, item of limited value, lottery tickets, time off work. These incentives can be used to convince non-donors to be donors and sustain regular donation among donors to get sufficient blood supply (Goette & Alois, 2008) [7].
The main obstacle about using material incentives is the concern about safety of the blood. But the risks will be reduced by improved testing procedures thanks to developments in technology. That way we can increase blood supply. Some consider that the benefit of increased blood donation (saving many lives) outweigh the risk of infection transmission (Ferguson et al., 2007) [8].

Due to globalization, in developed countries many people have access to their own resources and they might not need incentives as only one way to raise blood donation rate at high standard level. Voluntary, non-remunerated blood donations have long been a tradition in many European countries. However due to technological improvements in surgery, seasonal shortage especially in summer or winter, chemotherapy or other inoperable and incurable diseases, increase blood demand that made recruitment of sufficient numbers of voluntary, unpaid blood donors challenging. Therefore some of the countries started to use incentives in order to satisfy their needs for blood (Allerson, 2012) [18]

The EU countries engaged donors might have proper knowledge required to blood donation decision and might have altruistic attitude from previous generation. In addition the prospective donor must overcome aspects of fear, lack of time, lack of monetary compensation, and eligibility requirements (Sojka & Sojka, 2008) [19].

The purpose of this thesis is to present evidence on how selected incentives are perceived in the European Union countries. In particular the aim is to investigate whether individuals are discouraged or encouraged by incentives for donating blood. This can eventually contribute to the engaged blood donors interventions aimed at improving blood donation awareness, empowering their altruism rather than using incentives materials and help to overcome blood shortages**.** It will be also beneficial for community, health personnel, planners and policymakers, government and non-government organizations to empower voluntary, non-remunerated blood donor practice and other related activities.

1.2. Blood and blood donation

Blood is a body fluid that circulates in the arteries and veins of humans and other vertebrate animals, delivering nutrients to cells and carrying metabolic waste products away from same cells as defined by WHO (2002) [17]. Blood is also a source of replacement therapy in cases of its loss such as resuscitation of victims of road accidents, war injuries, during pregnancy, childbirth or in the postpartum period (Hannon, 2011) [20].

Blood is made up of three different life saving components which include plasma, platelets and red blood cells (Dailey, 2001) [69]. Blood transfusion is needed to save people's lives. Blood can only be taken from humans, and because blood includes perishable components, its inventory is of a brief course of time, which suggests that maintaining a healthy donor pool is not an easy task (Higgins, 1994 ; Lancet, 2005) [44] [5]**.**

Health educators and blood collection facility managers' goals merge to blood donation process. Endeavors (such as education, promotion and so on) to enhance blood donation behaviors, both emerge once a prospective donor gets involved in a blood collection facility. It is very necessary to acknowledge the historical background of blood donation and how blood donation works in order to perceive why person donates or does not donate blood (Allerson, 2012) [18].

Prior to 17th century, the system of blood transfusion was used to the legend or myth than applicable for therapy or treatment. In 1628, a British physician William Harvey ascertained about the blood circulation through the body and after few years' blood transfusion was attempted for the first time (Lefrère & Danic, 2009) [21]. In 1665 Physician Richard Lower made his research about blood transfusion in England where he transfused blood of dog to another. It was the first record of blood transfusion and became successful (ARC, 2011) [22].

They continued by making their research until in 1818 where a British obstetrician performed in his test of transfusion human blood to the other person for the treatment of postpartum hemorrhage and also became successful (ARC, 2011) [22]. Thereafter, the technology advanced, blood donation innovators increases to accomplish the previous ideas and made it feasible to the individual needs (ARC, 2011) [22].

In 1900, different organizations and companies were created, such as national blood collection agency, blood separation through plasma-pheresis collection blood units for testing disease and blood typing. By 1970s, all United States have blood bank and other from developed countries switched volunteer donors (ARC, 2011) [22]. As technology advanced, donating and receiving blood functioning smoothly and safely, that encouraged people to donate blood voluntarily (ARC, 2011) [22].

Thus, blood donation is a public health concern for healthcare systems throughout the world. Benedict et al (2013) [23] classified blood donation into three classes; i.e. non-remunerated voluntary blood donations, paid donations and family/replacement donations.

In developed countries, blood is mostly supplied via voluntary donations and such countries might use incentives in order to recruit blood donors. Blood collection differs from county to country. As WHO (2011) [16] explains, some countries grant the Red- Cross a patent, others use state patents while others manage independent blood banks.

Titmuss' work became the cornerstone for Governments and the World Health Organization (WHO hereafter) pleas of fully voluntary blood donation policies. The resolution WHA 28.72 was passed in 1975 advocating its member states to develop blood system base on non-remunerated donation of blood (WHO, 1975) [24].

Although, the World Health Organization (WHO) suggested that all countries commit to voluntary, non-remunerated blood donation; 49 out of 124 countries surveyed in 2006 had build this as a foundation. In 2009 WHO reemphasized their position with Melbourne Declaration on 100% Voluntary Non-remunerated Donation of Blood and Blood Components with the statement that "…*paid donation can compromise the establishment of sustainable blood collection from voluntary non-remunerated blood donors" as* Nwabueze et al (2009) [25] explained.

In addition, WHO advocated all activities associated with blood collection, testing, processing, storage and distribution be regulated at the national level through integrated blood supply networks and competent organization. In order to promote consistent implementation of standards and regularity in the quality and safety and blood products, the national blood system was to be administered by the national blood policy and legislative framework (WHO, 2009) [26].

By 2013, 122 countries out of 167 had established a national blood policy. In general 108 countries out of 167 have distinguished laws covering the safety and quality of blood transfusion with a high percentage in high-income countries then mid-income countries and lastly low income countries (WHO, 2016) [27].

1.2.1. Positive Factors Affecting Blood Donation

In developed countries several studies have shown factors affecting blood donation as Mohammad et al. (2011) [28] explain. For instance, Zaller et al., (2005) [29] found that reasons trigger blood donation included altruism, cash incentives, screening diseases and medical treatment in Asia countries.

Studies conducted in Asian countries and United State of America shows that also incentives such as, souvenirs, lottery tickets include blood donation investigations. Except in Saudi Arabia, the sample of 350 individuals, 45.8% among them donating blood with social responsibility (Mohammad et al., 2011) [28].

1.2.1.1. Altruism

The features of a classic altruistic blood donation are the following: it is done with no external rewards; it is intentional, voluntary and involves donors and it benefits blood recipients. Therefore, blood donation should be considered as an altruistic act only when it benefits recipients, with no benefit for donors (Ferguson, Farell, & Lawrence, 2008) [29].

Various surveys have shown that altruism and social responsibility were the most frequently indicated motivators to donate blood (Nguyen, DaVita, & Hirschler, 2008) [1].
Glynn et al, (2006) [30] showed that more than 55% of the donors considered social responsibility as an important motivation factor. In India 64.1% of donors were motivated by altruism, 31.4% they donated only for friends or relatives and 1.9% donated blood while they received monetary incentives (Sabu et al., 2011) [31].

1.2.2. Negative factors affecting blood donation

According to the research examined in the developed countries, one factor for not donating blood is the fear of being infected during transfusion process due to the HIV acquisition during plasma donation, not having enough time, health care personnel being not skilled, prevailing health conditions such as anemia, heart disease, blood pressure, drug abuse, poor health and other negative health effects such as loss of virility (Zaller et al., 2005) [29].

A cross sectional study was conducted on 1600 individuals to determine the motivating factors for blood donation in Greece. (71.0%) respondents were blood donors, (51.0%) among them were voluntary blood donors, then (49.0%) were remunerated blood donors and (29.0%) have not donated blood in their life time. The mostly cited 37.7% reason behind their low interest in donating blood was health problem (Marantidou, 2007) [32].

Other factors and main reason for not donating were feeling dizzy, not getting the opportunity, not being responsible, culturally indigenous fear, and lack of motivation to donate blood and having a volumetric deficiency of blood (Ferguson et al., 2007) [8].

1.3. Global Situation of Blood Donation

The need for blood is tremendous worldwide. In fact, for example in United States, people need a blood transfusion in every second. Although, the demand for blood increases 5% to 7% in each year, blood donations doesn't increase on the same rate (McCarthy, 2007) [4]. After WHO's history, in the United States, blood was donated with some offering financial incentives to encourage blood donors through diverse organization recorded with the US blood bank including the Red Cross, blood center and hospitals (Domen, 1995) [9].

Studies indicated that social demographic characteristics have changed. Studies related to United States of America, Europe, Asia and Africa demonstrated that the biggest number of all blood donors was men and almost all women were not considered as donors during blood donation (Barbee & Richard, 2011) [10].

Recently, however, proportions of female donors have risen dramatically in Europe and America (Rader, France, & Carlson, 2007) [11]. But it is still a problem in Africa where the majority of donors are men and women do not donate than often. For instance in Ethiopia males (54%) had donated blood more often than female donors (46%) (Chalachew et al., 2014) [12].

Roughly, about 112.5 million units of blood donations are collected worldwide. Almost half of this collected blood comes from high-income countries; which is 19% of the world's population. Nearly 110 million donations are made from about 13,000 blood centers in about 176 countries around the world (WHO, 2016) [13].

Blood collection varies corresponding to a country's income group. Low and middle-income country's annual donation per blood centre is 5400 as compared to 16000 in the high-income countries. The difference in the blood access level between the low and high-level income countries is very apparent. The whole issue of "blood donation rate" is to find an indicator for the general availability of blood in a country.

From the WHO report of 2016, 70 countries collected fewer than 10 donations per 1000 people of which, 38 countries are in WHO's African Region, 6 in the Americas, 6 in the Eastern Mediterranean, 5 in Europe, 6 in South-Eastern Asia and 9 in the Western Pacific. All are low- or middle-income countries (WHO, 2016) [13].

From the demographic information of blood donors, the age profile of blood donors shows that most young people in low and middle income countries donate more than in high-income level countries. From the gender profile, more male donors are observed in 16 out of the 119 reported countries. Only 10% of the donations received in these countries come from female donors. Demographic information of blood donors is important defining and auditing recruitment plans (WHO, 2016) [13].

1.4. Blood Donation in Europe

In the UK and other European countries, the blood supply is controlled and managed by National Health Service (NHS) Blood and Transplant, with blood only donated from non-remunerated voluntary blood donors. But some of EU countries such as Hungary, Cyprus and Bulgaria use remunerated system for remaining major blood suppliers (Kretschmer et al., 2004) [14].

In accordance with encouragement of WHO as to establish Voluntary Non–remunerated Blood Donation (VNBD) in different countries, the research examined in seventeen European countries in 2001 indicate that five among them (United Kingdom, Yugoslavia, Finland, Finland, Spain and Slovenia) use inclusive voluntary, non-remunerated blood donation system and they don't accept to use any particular incentives. But also, in some of other countries like Czech Republic, Greece, Italy, Macedonia and Croatian are using both systems: as offering materials incentives and non-remunerated for recruiting blood donors in order to get sufficient blood donation and sustaining blood banks (Mascaretti et al., 2004) [15].

A great number of European nations have better operating structures of non-remunerated donation. Moreover, in 2004 South-Eastern Europe (SEE) has launched the project named health network blood safety that increased voluntary, unpaid blood donation structure. There was a rise in the mean total blood donation from 34.7 per 1000 population in 2008 to 36.5 in 2010, in the 30 European nations. Sadly, East European states have adopted paid donation systems where donors are presented a compensation for blood donation (WHO, 2011) [16].

1.4.1. Amount of Blood Donated in European Union Countries

There exists a survey made in 2012 for 27 EU countries with people designated by each country's blood donation authority. According to this survey, the whole number of blood collected in the 27 member states had a mean of 36 (range 4-59) per 1 000 citizens. The total number of active donors was 13,180,568 (Hoeven, Janssen, & Rautmann, 2012) [33].

In spite of some achievements, self- satisfaction has not yet been achieved in mostly states. The report prepared by European Commission about voluntary and unpaid donation argued that, even if 27 EU countries put into action national policies related to self-satisfaction of blood and blood components, only 17 of them were defined their self-sufficiency at 100 % (United Kingdom, Czech Republic, Denmark, Finland, Estonia, Germany, Latvia, Luxembourg, Netherland, France, Italy, Portugal, Slovakia, Spain, Sweden and Croatia) (COM, 2011 ; Hoeven, Janssen, & Rautmann, 2012) [33] [34].

Country	Amount of blood donated (Voluntary, non-paic donation). Whole blood units	Whole blood pe 1000 inhabitants
Belgium	538 338	48,5
Croatia	179 304	41,9
Czech Republic	430 700	40,8
Denmark	298 083	53,2
Estonia	58 120	43,9
Finland	246 429	45,4
France	2 632 089	40,2
Germany	4 785 048	59,4
Ireland	141 354	30,7
Italy	2 683 127	45,2
Latvia	53 180	26,6
Luxembourg	20 631	38,4
Netherlands	506 556	30,3
Portugal	392 910	37,5
Slovakia	204 773	32,0
Spain	1 702 768	37,0
United Kingdom	2 263 885	35,5

Table 1 : Amount of whole blood collected across EU countries with VNRBN system in 2012

Data source: **(Hoeven, Janssen, & Rautmann, 2012)** [33].

Table 1 shows that the whole amount of blood donated with voluntary and unpaid donation system in only 17 countries among 27 that have been surveyed. Top five countries related to the highest amount of collecting blood units are Germany (4 785 048 blood units) followed by Italy (2 683 127 blood units), France (2 632 089 blood units), United Kingdom (2 263 885 blood units) and Spain (1 702 768 blood units) (Hoeven, Janssen, & Rautmann, 2012) [33].

Country	Amount of blood donated (paid donation) Whole blood units	Whole blood per 1000 inhabitants
Bulgaria	167 851	22,9
Cyprus	57 847	67,1
Greece	542 240	51,6
Hungary	425 637	44,2
Lithuania	79 367	26,6
Malta	16 995	40,7
Poland	1.173.050	30,4
Romania	399.848	19,9
Slovenia	93.099	45,3

Table 2 : Amount of whole blood collected in EU countries with paid-donation system in 2012

Data Source: (Hoeven, Janssen, & Rautmann, 2012) [33].

Furthermore, 9 countries among 27, offered monetary incentives during blood donation. Table 2 demonstrates the amount of collecting blood in those 9 countries with paid donation system. Poland (1.173.050 blood units) collected much more blood units when compared to the rest of other eight countries (Hoeven, Janssen, & Rautmann, 2012) [33].

1.5. The Most Commonly Utilized Blood Donation Incentives in Europe

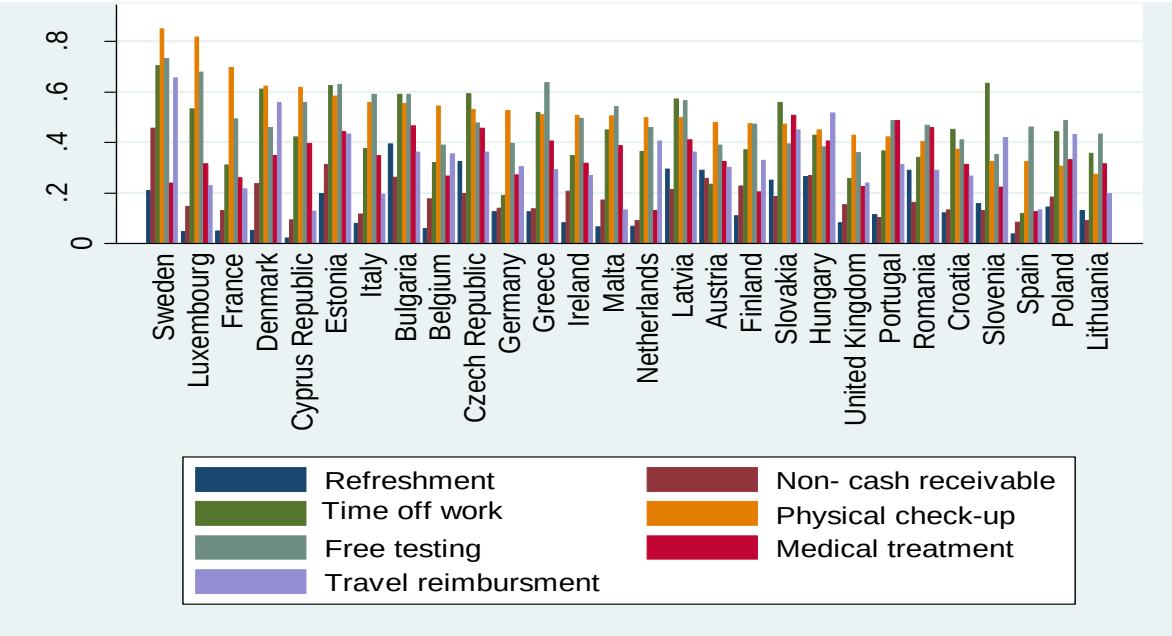

Figure 1 : The most commonly incentives used in EU countries

In EU countries, refreshment, time off work, free testing, travel reimbursement, cash amount, medical treatment, physical check-up are the commonly usable incentives to participate in blood donation activities. Based on our study, figure 1 shows that Time off work, Physical check-up, Free testing are most preferred incentives especially in countries like Sweden, Luxembourg, and France with more than 56 % of individuals approving their usage among 28 European countries.

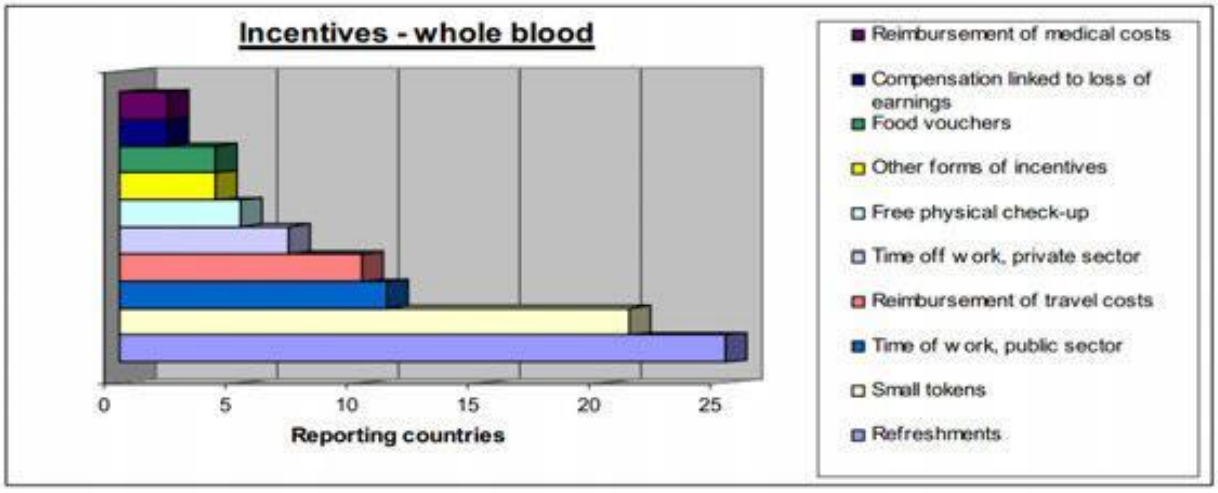

Figure 2 : Incentives for whole blood donation

Data source: (COM, 2011) [34].

Figure 2 taken from Commission to the European Parliament shows incentives offered to whole blood donors (COM, 2011) [34]. The most commonly utilized incentives in these 28 European countries include small token such as mugs and t-shirts, refreshment, time off work and reimbursement of travel cost. France, Italy and Netherlands use incentives such as time off for blood donors, although in Italy, time off work incentive is more used than any other country in Europe and it has registered increasing average blood donation per year at 40 % (Lacetera, 2012) [35].

1.5.1. Effect of Incentives towards Blood Donation

In economics, one basic premise is that any kind of behavior is affected by its expected benefits or cost. Most people respond to change in benefit or cost as Laffont et al (2009) [36] proved. Economic theory assumes the strength of how people are influenced by cost and benefits which make them to change their altruistic behavior as a response to incentives. If donating blood is a normal good, then we expect that the demand for donating blood will rise when the cost of blood donation decreases according to law of demand (Fehr & Falk, 2002) [37].

The impact of incentives on blood donation keeps its core position on the role of incentives in health policy (Busby, Kent, & Farrell, 2013) [39]. An incentive is defined as any factor which can be in the financial form or not enables or influences a particular course of action. Incentives could be economic measure to motivate beneficial activities for the economy or society. Some examples are as salaries, grants, awards, cash transfer, lottery ticket, free test of diseases or any other kind of reward (Crumm, 1995) [40].

However, during the blood donation activity, incentives can be found as one of the factors that make a negative influence, and it might have harmful or detrimental effect on the altruistic behavior in long-run (Smith & York, 2004) [41]. Financial incentives are one of the ways that can change a person's health behavior. In developing countries, using financial incentives has become a policy mechanism to promote utilization of primary health care services, HIV screening and child immunization (Ranganathan & Lagarde, 2012) [42].

These financial incentives in European countries have been utilized by many people in health care interventions. The incentives offered in Europe are not aimed at promoting HIV screening or child immunization but to discourage people from smoking, encourage weight loss, drug abstinence, blood donation and cancer screening (Higgins et al., 2012) [43], keeping an appointment and using chronic disease medication regularly (Claassen et al., 2007) [45].

Different impacts of various incentives on blood donation have been shown in numerous studies that have so far been carried out. Sanchez et al. (2001) [46] surveyed a sample of 7489 donors by an anonymous mail survey. They analyzed that proffering blood credits and medical testing led to a decrease of blood donors from 58% to 46%. But, rewards with small value motivated 20% of blood donors.

Glynn et al. (2003) [47] observed that blood credits motivated 45.588 blood donors (61%), whereas cholesterol screening (61%) and prostate-specific antigen (PSA) screening motivated 73% of male donors. Blood donors under the age of 25 had 4 - 5 times more willingness to donate if provided with redeeming incentives such as events ticket, lottery, gift which was not seen for blood donors at the age of 55. The research also indicated that people above 55 years old were discouraged to donate blood and so their blood donation rate declined by 10% though existed of some compensatory incentives (Lacetera & Macis, 2010) [49].

Titmuss (1970) [50] argued that incentives offered for blood donation can reduce altruism which is known as motivational crowding out. Frey et al (1997) integrates psychological effects in economics where he shows that rewards crowd-out intrinsic behavior. For blood donation, extrinsic motivation tools such as monetary incentives are thought to undermine intrinsic motivation (Frey & Oberholzer, 1997; Benabou & Tirole, 2003) [51] [52]. Motivational crowding-out in economics is measured by the decline in behavior when rewards or other kind of incentives are introduced (Gneezy, Meier, & Rey-Biel, 2011) [53] There are also many studies in psychology literature that have developed shortly after Titmuss which showed the undermining impacts of rewards on intrinsic motivation (Deci, 1975) [55].

Promberger et al. (2012) [56] found that receiving of monetary incentives are beneficial, particularly if incentives used more effectively than alternative approaches. Eventually, the use of any type of incentives leads to an increase in likelihood altruistic behavior. The book of 'The Gift Relationship' by Titmuss (1970) [50] explained the importance of donating blood and the effects of financial incentives on blood donation. The book argues that voluntary system could lead to sufficient amount and higher quality of blood in a more systematic way, than a system of using monetary incentives for blood donation (Hartford, 2011) [57].

Policy makers and scholars focus their attention on the need to compromise in the performance of agreed and efficient polices to increase blood supply, and absolutely assume incentives have to be involved in these polices (Ferguson et al., 2007 ; Lacetera, Macis, & Slonim, 2013) [8] [58]. Furthermore, non-financial incentives have been suggested as the best feasible solution to traverse the rigid dichotomy between altruistic donations and paid donations (Buyx, 2009; Sass, 2013) [59] [60].

The most essential for Titmuss (1971) is that how he defended and maintained exceptional ethics of altruistic for blood donation versus paid donors. He declared that providing payment for blood could decrease the opportunity for altruistic donations which would make unpredictable negative consequences that leads to a huge restriction of individuals' choice of other alternatives.

The first alternative is to incentivize blood donation through the use of material (non-monetary) and non-material incentives. The disadvantage of this alternative , people have a risky life-style might be encouraged to donate if cash incentives offered and those who are infected with some diseases such as hepatitis can donate at the higher proportion, that would decrease blood safety and point out a deficiency in blood supply (Eastlund, 1998) [61].

Researchers in economics and psychology have provided evidence that materials incentives may undermine pro-social behavior of donors and this situation causes reduction in blood supply (Sliwka, 2007) [62]. According to the model by Roland et al. (2006) [63] offering cash incentives may crowd out intrinsic motivation of blood donors. Research conducted by Ariely et al. (2009) [64] shows that incentives spoiled the image of volunteerism for young generation which may lead to a low blood donation in the future.

Another study by Glynn (2002) [48], found that there are various reasons for donating blood, the main being altruism. He also declared that the use of incentives may destroy altruistic feelings of some donors. And the laboratory experimented by Fehrn & Rochenbach (2003) [38] proved that the use of incentives affects pro-social behavior of individuals in the long-term.

Slikwa (2007) [62] also introduced a model which assumes that there are three different kinds of persons: pro-social, strictly selfish and conformist. Conformist people have social preferences and are influenced by their moral conviction and external acts. He figured out that conformists are fair or pro-social if and only if they believe that a high percentage of the other faithful persons are also fair. Whereas offering material incentives indicate that conformists that there are more selfish persons in community compared to pro-social persons.

The counterpart's motives are necessary for persons who participate in an activity. Persons have willingness to act pro-socially whether they see that their counterparts are non-selfish or not. In order to for blood banks to demonstrate to blood donors that they chase their own goals, blood banks have offered incentives to dosnors who are no longer to act frequently as usual if an organization tries to enhance donating blood with payoff (Ellingsen & Johannesson) [65]

Therefore, performance of organizations such as Red Cross decreased and blood donation decrease as a result of using monetary incentives and other types of incentives during recruitment (Le Grand, 2003) [66]. Furthermore, incentives undermine pro-social motivation of blood donors and their contribution compared to the situation before using incentives (Gneezy & Rustichini, 2000) [54].

A study in social psychology that illustrates the influence caused by small interventions on other's behavior was reviewed by Cialdini (1993) [67]. For example, individuals participate in civic engagement to signal altruism to receive social esteem. In his study, he found out that administering monetary incentives could make signaling challenging and therefore that causes crowding out into community. On the contrary, in order to improve signaling and the effects crowding out, charity options were improved. (Roland & Tirole, 2006) [63].

In the hope to boost blood donation, the use of incentives have been widely adopted. Johanneson & Merstrom (forthcoming) [65] treated two kinds of groups (men and women) in their experiment. With the introduction of monetary payments with consistence in crowding out effects for women, the supply of blood donor decreased from 43% to 33%. On the contrary,

men were more likely to donate if monetary incentives were offered. Conversely, the initiation of charity options increased the supply of blood donors.

The application of selective incentives may decrease pro-social behavior rather than increase it. Goette et al. (2008) [7] examined how the use of selective incentives affects blood donations in the large-scale field experiments. Then, the results of these incentives found that there is no evidence that offering incentives either lottery ticket or free cholesterol test in any way could attract blood supplier who have the tendency to generate a rejected donation.

Offering incentives for blood donation can undermine altruistic motivation. The study conducted in 2008 assessed the Titmuss's hypothesis though potential blood donors in Sweden. They classified potential blood donors into three groups. First group was given an opportunity to donate blood without any incentives; the second group was offered a payment of $ 7 and the third group had a choice of either to receive a payment of $7 or donating $7 to charity. The founding was different according to men and women. For these experiments carried out on three different groups, there was no noticeable difference in blood supply for the men.

For these three experimental groups there is no significant difference of blood supply for men. Thus, when monetary incentives were offered, blood supply decreased significantly by the side of women. This means that women are more likely to be discouraged by material incentives compared to men (Johanneson & Mellstrom) [65].

Moreover, attitude towards incentives may vary according to donors' characteristics. As the age increases, some of the donors may not consider the social benefit and therefore they have started to donate less frequently. Thereby, the desires to receive incentives decreases as age increases and it is apparently lower among donors who donate for altruistic reason (Kasraian & Mahtab, 2011) [68].

Evaluating the effects of future incentives based on the motivation to donate blood is complicated. Results demonstrated that first-time-donors were more inclined to donate for extrinsic reasons than repeat donors. The repeat donors would be encouraged to donate for intrinsic reasons and discouraged if offered any kind of incentives as cash payment, lottery ticket (Eastlund, 1998) [61].

2. METHODOLOGY

This chapter summarizes the research design and research methodology.

2.1. Study Area, Data Collection and Storing

This study was conducted in 28 EU Countries such as United Kingdom, Czech Republic, Denmark, Finland, Estonia, Germany, Latvia, Luxembourg, Netherland, France, Italy, Portugal, Slovakia, Spain, Sweden, Croatia, Bulgaria, Cyprus Republic, Greece, Hungary, Lithuania, Malta, Poland, Romania, Slovenia, Austria, Slovakia, Northern Ireland, and Belgium.

The research on blood donation is secondary dataset that has been concisely obtained from the Euro-barometer survey series (82.2) conducted in October 2014 under controlled by the European Commission and TNS opinion. The dataset have been undertaken with 27868 citizens in 28 EU countries and the samples are drawn from each country according to their population. All interviewers had to have nationalities and resident permit of 28 EU member states.

They are recommended to know at least one of the appropriate national languages for answering questionnaire. The eligible surveyed individuals aged 15 and above and they have been interviewed by face to face: http://zacat.gesis.org/webview/index.jsp [69]. Moreover, to get more information of other relevant dataset on our state variables, we helped by world development indicator database: http://databank.worldbank.org/data [70]. From this source we found GDP per capita of each EU countries in 2014.

2.2. Response to Incentives and Statistical Analyses

Incentives can encourage, discourage or make no difference towards blood donors. These reactions are assessed within demographic groups (age, gender, education, and marital status), socio-economic variables [occupation (unemployed, employed and self-employed), community (individuals live in town or village), household], wealth index (ownership of durables), GDP per capita.

These incentives are classified into six main groups: Receiving refreshments, acceptable physical check up, free testing, medical treatment, travel reimbursements, time off work and acceptability of cash amounts. Responses to incentives (percentage of being encouraged or discouraged) and relevance of different characteristics were evaluated by using statistical software package (STATA) to adjust for distinctive rate of response.

The dependent variable is acceptability of cash for blood donation (monetary incentives). In our model, monetary incentive is donated by "cash" and dummy variable is equal to 1 when a person agrees about acceptability of cash for blood donation and 0 if they do not. Table 3 describes mean, standard deviation, maximum and minimum of individuals depending on acceptability of cash. Because our dependent variable is a binary variable, we also examine our dataset with Probit regression analysis model, in order to compare their t-statistic results, marginal effect, coefficients and p-value, with 95% of significance level. The Probit regression models allowed us to compare if the situation whether individuals accept or do not accept cash for blood donation.

We have conducted research into three models. Firstly; we analyzed the impact of demographic groups, social economics variables, ownership of durables and countries on acceptability of receiving cash for blood donation. Secondly we analyzed the impact of the individual is who have higher scores on wealth index (ownership of durables) on acceptability of receiving cash for blood donation. Thirdly we assessed of how GDP per capita influenced attitude toward incentives for blood donation.

3. RESULTS AND DISCUSSION

This section presents findings of our sturdy.

3.1. Acceptability of Cash Payment for Blood Donation

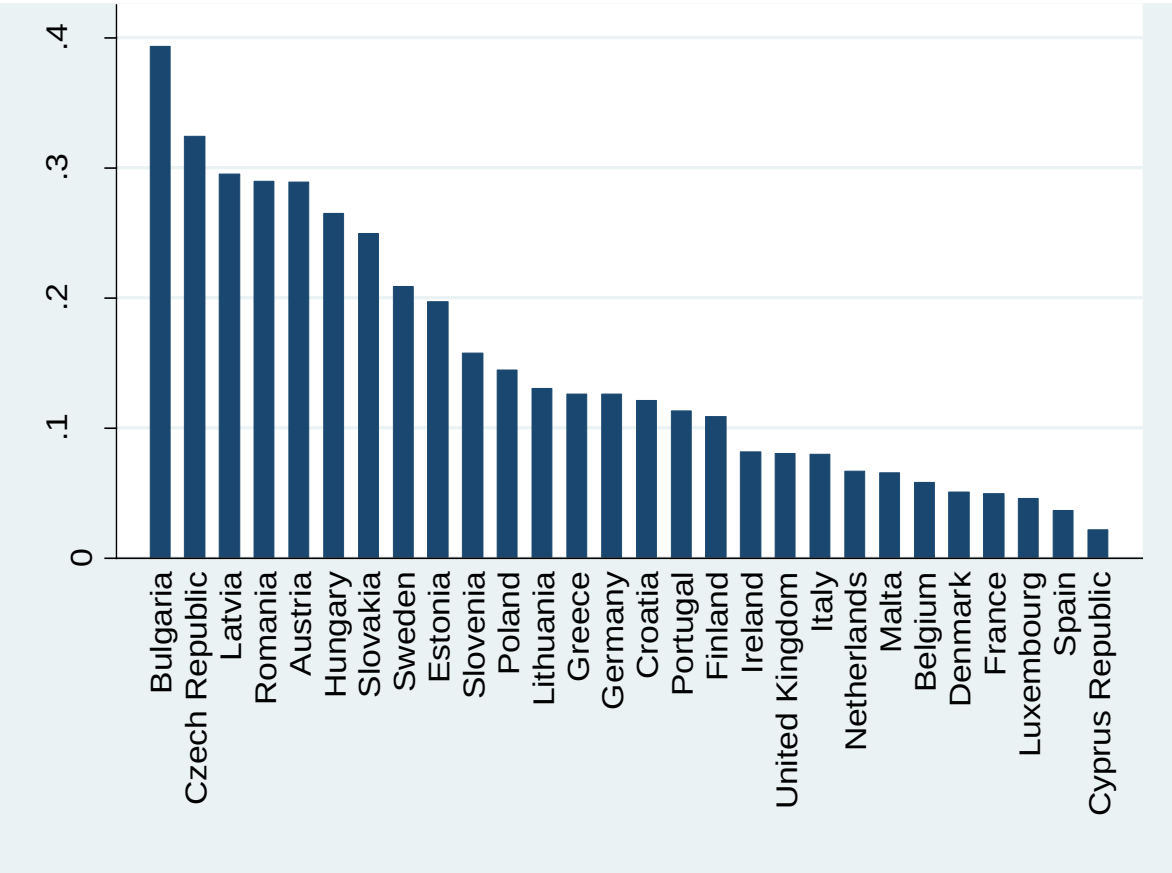

Figure 3 : Acceptability of cash payment for blood donation in EU countries

Figure 3 represents percentage of acceptability of cash payment for blood donation in EU countries. As the figure displays that there is no much impact that appeared to almost all countries, except some of the countries that are more likely to accept cash payment for blood donation at higher percentage than others. Such as Bulgaria with almost 40%, Czech Republic (32%), Austria (28%), Latvia (29%), Romania (28%), Hungary (27%) and Slovakia (25%).

Other countries don't approve cash incentives during blood donation and they are in range of 5% to 15 % of accepting cash payment.

3.2. Attitude Towards Monetary Incentives for Younger and Older Blood Donors

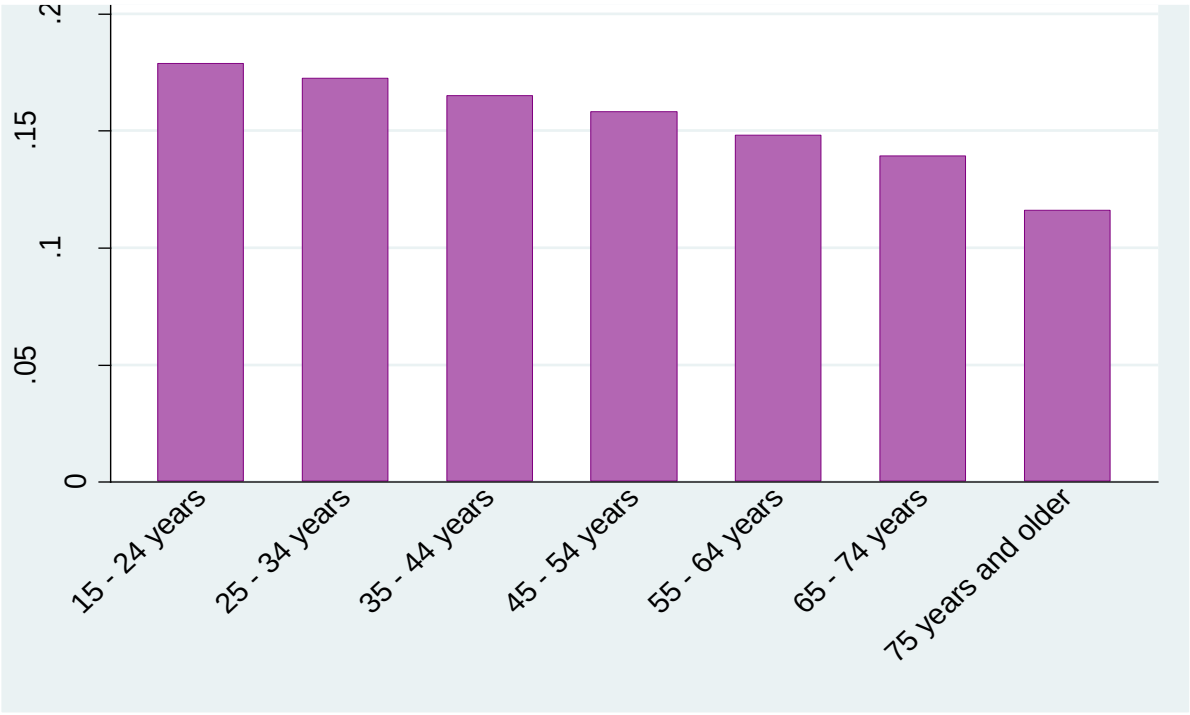

Figure 4 : Attitude towards Incentives Varies According to Age

We assessed whether attitude towards incentives varies according to age (Figure 4). There is difference in attitude toward cash amount offered, in various age groups. The level of being encouraged by accepting cash payment for blood donation between age groups has changed from 0.2 to 0.1 when using 15 to 75 years age groups young and older. Younger individuals under or equal to 25 years are heatened by receiving cash amount than elder individuals who are upper or equal to 56 years old. Blood donation by receiving cash amount decrease as the age increase.

Attitude towards incentives may vary according to donors' characteristics. As the age increase, some of the donors may not consider the social benefit and therefore donate less frequently. Thereby, the desire to receive incentives decreases as age increases and it is apparently less among donors who donate for altruistic reason (Kasraian & Mahtab, 2011) [68].

Roland et al. (2006) [63] mentioned that if cash incentives offered it can crowd out intrinsic behavior of blood donors. Thereafter, cash incentives spoiled the image of volunteerism for young generation which may lead to lower blood donation in the future (Ariely et al., 2009) [64].

3.3. Descriptive Statistics

Variable Name	Variable Description	Overall Mean (Std.Dev)	Min	Max	Individuals (accepting cash) (Std.Dev)	Individuals(not accepting cash) Mean (Std.Dev)
Age	Person's age	50.57 (18.33)	15	99	48.46 (18.06)	50.95 (18.36)
Education	The age at which full education has been corrected	20.46 (11.20)	0	99	20.80 (11.96)	20.39 (11.05)
Female	A dummy variable equal to 1 if a person is a female, 0 if not	0.559 (0.496)	0	1	0.533 (0.499)	0.564 (0.496)
***Marital status**						
Single	A dummy variable equal to 1 if a person is single, 0 if not	0.278 (0.448)	0	1	0.304 (0.460)	0.273 (0.446)
Married	A dummy variable equal to 1 if a person is married, 0 if not	0.526 (0.499)	0	1	0.480 (0.500)	0.534 (0.499)
Divorced	A dummy variable equal to 1 if a person is Divorced, 0 if not	0.187 (0.390)	0	1	0.205 (0.404)	0.184 (0.387)
***Community**						
Town	A dummy variable equal to 1 if a person is located in town, 0 if not	0.692 (0.462)	0	1	0.704 (0.456)	0.690 (0.462)
Village	A dummy variable equal to 1 if a person is located in village, 0 if not	0.307 (0.461)	0	1	0.295 (0.456)	0.309 (0.462)
***Occupation status**						
Unemployed	A dummy variable equal to 1 if a person is unemployed, 0 if not	0.523 (0.499)	0	1	0.504 (0.500)	0.527 (0.499)
Self employed	A dummy variable equal to 1 if a person is self-employed, 0 if not	0.070 (0.254)	0	1	0.075 (0.264)	0.068 (0.253)
Employed	A dummy variable equal to 1 if a person is full time or part time employee, 0 if not	0.407 (0.491)	0	1	0.421 (0.494)	0.405 (0.491)
Household	A dummy variable equal to 1 if a person is 15+ age and live in their own house, 0 if not	0.488 (0.500)	0	1	0.446 (0.497)	0.496 (0.500)
Television	A dummy variable equal to 1 if	0.971	0	1	0.966	0.972

	a person has television ,0 if not	(0.169)			(0.181	(0.166)
DVD player	A dummy variable equal to 1 if a person has DVD player ,0 if not	0.598 (0.490)	0	1	0.553 (0.497)	0.606 (0.489)
Music	A dummy variable equal to 1 if a person access on music ,0 if not	0.512 (0.500)	0	1	0.470 (0.499)	0.520 (0.500)
Desk Computer	A dummy variable equal to 1 if a person has computer ,0 if not	0.451 (0.498)	0	1	0.455 (0.498)	0.450 (0.497)
Laptop	A dummy variable equal to 1 if a person has laptop ,0 if not	0.515 (0.500)	0	1	0.455 (0.498)	0.526 (0.499)
Tablet	A dummy variable equal to 1 if a person has tablet ,0 if not	0.274 (0.446)	0	1	0.225 (0.417)	0.283 (0.450)
Smart Phone	A dummy variable equal to 1 if a person has smart phone,0 if not	0.473 (0.499)	0	1	0.440 (0.496	0.479 (0.500)
Internet Connection	A dummy variable equal to 1 if a person has internet connectior ,0 if not	0.671 (0.470)	0	1	0.631 (0.483)	0.678 (0.467)
Apartment	A dummy variable equal to 1 if a person has an apartment house ,0 if not	0.515 (0.500	0	1	0.550 (0.498)	0.509 (0.500)
Car	A dummy variable equal to 1 if a person has car ,0 if not	0.702 (0.457)	0	1	0.627 (0.484)	0.715 (0.451)
None	A dummy variable equal to 1 if a person has none material , 0 if not	0.003 (0.050)	0	1	0.001 (0.031)	0.003 (0.053)
***Internet Use Home**						
	A dummy variable equal to 1 if a person use internet at home every day at home,0 if not	0.562 (0.496)	0	1	0.526 (0.499)	0.568 (0.495)
Place of work	A dummy variable equal to 1 if a person Use internet at place of work,0 if not	0.278 (0.448)	0	1	0.249 (0.432)	0.283 (0.450)
Somewhere else	A dummy variable equal to 1 if a person use internet every day at somewhere else, 0 if not	0.142 (0.349)	0	1	0.134 (0.341)	0.143 (0.350)
Observation N=27868						

Table 3: Descriptive Statistics

The descriptive statistics of EU countries dataset are established in Table 3.The first column demonstrates the overall means and standard deviations of our variables of interest in the entire sample. Second and third columns show the minimum and maxmum of the variables. Fourth

and fifth columns show the same information as the first column for person who accept cash and person who don't accept cash for blood donation, respectively.

The average age of individuals of our sample is 50 and the age at which full education has been completed is 20.We analyzed blood donation whether the acceptability of cash incentives and non-cash incentives for blood donation affect stem from different generation. We obtained that younger persons are more likely to accept cash incentives than older ones. Moreover attitude towards incentives may vary according to donors' characteristics. According to our sample of 27,868 individuals, 55 % are females, 53.3% of individuals accepting cash payment for blood donation are females and 56.4% of individuals who do not accept cash payment for blood donation are females.

27% of the sample was reported to be singles. 30% of individuals that accept cash more often for blood donation are singles and 27.3% of individuals who don't accept cash payment are singles. For the case of married individuals, 52% are married individuals of our sample, 48% of individuals who accept cash payment are married and 53% of individual who don't accept cash payment are married. Divorced individuals constitute 18.7 % of the whole sample. 20 % of individuals that approve cash incentives are divorced and 18 % of them are not accepting cash.

Individuals who live in town are 69.2% of the sample. 70% of individuals who accept cash payment for blood donation are those who live in town. 69 % of individuals who don't accept cash payment are individuals who live in town. Individuals who live in village are 30.7 % of the sample. 29.9% of individual who accept cash incentives are those who live in village and 30.9 % of individuals who don't accept cash incentives are individuals who live in the village.

52% of the sample is unemployed individuals. 50.4% of individuals that approve cash payment are unemployed and 52 % of those who don't approve cash payment are unemployed.
Employed individuals constitute 40.7% of the sample. 42.1% of individuals who accept cash payment are employed and 40.5% of those who don't accept cash payment are employed. About self-employed individuals comprise 7% of the sample. 7.5% of individuals who accept cash

payment for blood donation are self-employed and 6.8% of individuals who don't accept cash are self-employed.

For individuals aged 15 and above stay in their houses constitutes 48.8% of the sample. 44.6% of individuals who accept cash payments are those who aged 15 and above. 49.6% of those who don't accept cash payment individuals who aged 15 and above.

About ownership of durables, individuals who have their own television are 97.1% of the whole sample, 96.6% of individuals who approve cash incentives are those who access on television and 97.2% of individuals who don't approve cash incentives are those who access on television. Individuals who access on DVD player are 59.8% of the sample. 55.3% of those who accept cash payment are individuals who access on DVD player and 60.6% of individuals who don't accept cash payment are individuals who access on DVD player.

Individuals who access on music comprise 51.2% of the sample. 47% of individuals who approve cash payment are those who access on music and 52% of those who don't approve cash payment are individual who access on music. For individuals who have their own computers constitutes 45.1% of the sample. 45.5% of those who accept cash incentives are individuals who have computers and 45% of individuals who don't accept cash payment are those who have computers.

Individuals who have accessibility on laptops are 51.5% of our sample. 45.5% of individuals who approve cash payment are those who have laptops and 52.6% of those who don't approve cash payment are individuals who have laptops. Individuals who have their own tablets are 27.4% of the sample. 22.5% of individuals who accept cash payment are those who have tablets and 28.3 % of those who don't accept cash payment are individuals who have tablets. For individuals who have smart phones comprise 47.3% of the sample. 44% of individuals who agree with cash payment are those who possess smart phones and 47.9 % of individuals who disagree with cash payment are those who have smart phones.

67.1% of the whole sample is individual who access on internet connection. 63.1% of those who approve cash payment are individual who possess an internet connection and 67.8 % of individuals who don't approve cash payment are those who have an internet connection. 51% individuals of our sample have apartment houses. 55% of individuals accepting cash incentives are those who have apartment houses.

50% of individuals who don't accept cash payment are individuals who possess an apartment house. Individual who have their own cars are 70% of the whole sample. 71% of individuals approve cash incentives are those who have car and 62 % of individuals who do not approve cash payment are those who have car. Individuals who have nothing are 0.3 % of the whole sample. 0.1 % of individual who accept cash incentives are those who have nothing and 0.3 % of those who could not accept cash payment are individuals who have car. Almost all individuals who could have higher scores on ownership of durables accept cash payment at lower percentage.

We also evaluate whether cash payment affect individuals who use internet in different places. Individuals who use internet at home are 56.2% of the sample. 52.6% of individuals who accept cash for blood donation are those who use internet at home and 56.8% of those who don't accept cash for blood donation are individuals who use internet at home.

For individuals who use internet at place of work are 27.8% of the whole sample, 24.9% of those who approve cash incentives are individuals who use internet at place of work and 28.3% of individuals who don't approve cash payment are those who use internet at place of work. Individuals who use internet somewhere else constitutes 14.2%. 13.4% of those who accept cash incentives are individuals who use internet somewhere else and 14.3% of individuals who don't accept cash payment are those who use internet somewhere else.

3.4. The effect of Social Economics Variables on Acceptability of Cash for Blood Donation

Variable	Cash est1	Cash est2	Cash est3
Female	-0.0174***	-0.0170***	-0.0177***
	(-3.89)	(-3.80)	(-3.88)
Age	-0.0040977	-0.0040993	-0.0040998
	(-8.21)	(-8.30)	(-8.38)
The age at which full education has been completed	0.000252	0.000244	0.000616**
	(1.25)	(1.22)	(3.04)
Single	0.0255***	0.0311***	0.0303***
	(4.50)	(5.67)	(5.40)
Divorced	0.0237***	0.0282***	0.0351***
	(3.63)	(4.39)	(5.34)
Others	0.0622	0.0661	0.0674
	(1.56)	(1.65)	(1.64)
Employed individual	0.000322	0.00138	0.0209***
	(0.06)	(0.27)	(4.08)
Self employed	0.0146	0.0131	0.0246**
	(1.62)	(1.47)	(2.70)
Town	0.00578	0.00724	0.00824
	(1.20)	(1.51)	(1.70)
Household	0.00356	0.00285	0.00502*
	(1.47)	(1.18)	(2.07)
Television	-0.0133		
	(-0.91)		
DVD player	0.0137*		
	(2.40)		
Music	0.00880		
	(1.61)		
Computer	0.00319		
	(0.59)		
Laptop	-0.00905		
	(-1.52)		
Tablet	-0.00756		
	(-1.30)		
Smart phone	0.0116*		
	(2.01)		
Internet	-0.0119		
	(-1.74)		
Car	-0.0190**		

	(-3.26)	
Apartment	-0.0126*	
	(-2.54)	
None	-0.119*	
	(-2.54)	
Beligium	-0.223***	-0.231***
	(-13.91)	(-14.50)
Bulgaria	0.118***	0.103***
	(7.15)	(6.37)
Croatia	-0.158***	-0.166***
	(-9.89)	(-10.43)
Cyprus Republic	-0.246***	-0.259***
	(-12.34)	(-13.01)
Czech Republic	0.0297	0.0246
	(1.86)	(1.54)
Denmark	-0.236***	-0.240***
	(-14.31)	(-14.57)
Estonia	-0.0852***	-0.0964***
	(-5.27)	(-6.04)
Finland	-0.169***	-0.176***
	(-10.38)	(-10.87)
France	-0.235***	-0.244***
	(-14.71)	(-15.30)
Germany	-0.165***	-0.167***
	(-11.35)	(-11.50)
Greece	-0.158***	-0.164***
	(-9.83)	(-10.23)
Hungary	-0.0222	-0.0269
	(-1.40)	(-1.71)
Ireland	-0.207***	-0.211***
	(-12.79)	(-13.10)
Italy	-0.205***	-0.213***
	(-12.61)	(-13.17)
Latvia	0.0126	0.00253
	(0.76)	(0.16)
Lithuania	-0.145***	-0.156***
	(-8.84)	(-9.65)
Luxembourg	-0.237***	-0.245***
	(-12.04)	(-12.44)
Malta	-0.209***	-0.217***
	(-10.62)	(-11.09)
Netherlands	-0.222***	-0.225***
	(-13.88)	(-14.19)
Poland	-0.141***	-0.149***
	(-8.62)	(-9.22)
Portugal	-0.176***	-0.180***

	(-10.72)	(-11.02)	
Romania	0.0178	0.00678	
	(1.07)	(0.42)	
Slovakia	-0.0267	-0.0337*	
	(-1.66)	(-2.11)	
Slovenia	-0.110***	-0.124***	
	(-6.83)	(-7.82)	
Spain	-0.249***	-0.253***	
	(-15.19)	(-15.54)	
Sweden	-0.0762***	-0.0799***	
	(-4.70)	(-4.94)	
United Kingdom	-0.210***	-0.215***	
	(-13.88)	(-14.23)	
Wealth index		-0.000562	-0.00647***
		(-0.37)	(-4.39)
GDP per Capita			-0.00000227***
			(-18.64)
Cons	0.291***	0.267***	0.185***
	(14.47)	(19.17)	(17.56)
N	27868	27868	25868

t- statistics results are in parentheses, * p<0.05, ** p<0.01, *** p<0.001

Table 4. Probit regression for blood donation in European Countries.

We asserted the results of our research of the EU Countries' sample in Table 4. The results represented in this section rely on t-statistics results that are in parentheses and the coefficients which are marginal effects.

In the first model, we probit female, age, education, marital status, occupation, community, household, ownership of durables and country on acceptability of cash for blood donation. The coefficients of female (-0.0174) is strongly statistically significant, which means females are less likely to approve cash incentives for blood donation than males. This result is in line with our theory. In the experiment of Johannesson & Mellstrom treated two kinds of groups (men and women). The results have shown that the supply of blood donation decreased from 43% up to 33% if monetary incentive introduced. Meanwhile, women do not accept monetary incentives, which is differently for men that are more likely to approve them.

From young to older individuals based on their age , (-0.0040977) the coefficient demostrate that all of them are less likely to approve cash incentives for blood donation and it is statistically significant. About the age at which full education has been completed (0.000252), the coefficient is positive which indicates that more educated individuals are more likely to accept cash incentives for blood donation, yet the effect is not statistically significant.

Marital status cathegorized into three cathegories that are married individuals which is our left out variable, singles (0.0255) and divorced (0.0237) individuals. Coefficients presented into parentheses indicate that there is statistically significant outcome which means both singles and divorced individuals are more likely to accept cash payment for blood donation compared to married individuals. Employed (0.000322) and self-employed (0.0146) individuals are not statistically different from unemployed in terms of acceptability of cash.

For the individuals who live in town (0.00578) are more likely to approve cash incentives distinguished to those who live in village and its coefficients indicates that there is no statistical significance.

Individuals who have higher scores on ownership of durables most of them are less likely to approve cash incentives based on its coefficients obtained in Table 4, shows that there is statistical significance. For the individual who have their own television (-0.0133) are less likely to accept cash payment and its coefficients indicates that there is no statistically significant relationship. For those who have DVD player (0.0131) are more likely to approve cash incentives means that there is statistically significant relationship.

Individuals who access on their own music (0.00880), computer (0.00319), are more likely to approve cash payment for blood donation and those who possess on their own laptops (-0.00905) are less likely to accept cash payment for blood donation. Coefficients presented in parantheses demonstrate that there is no statistically significant relationship.

About individuals who possess their own cars (-0.019) are less likely to accept cash payment for blood donation and there is statistically significant based on its coeficients. For those who have their own apartment (-0.0126) are less likely to approve cash payment for blood donation and there is statstically significant which is in line with our expectations.

We also assessed individuals in each country of 28 EU countries, we found that most of them are less likely to approve cash incentives and their p-value indicates that there is strongly statistical significance except individuals who located in Czech Republic (0.0297), Lativia (0.0126) and Romania (0.0178) are more likely to accept cash payment for blood donation and these coefficients shows that there is no statistical significance. Hungary (-0.0222) and Slovakia (-0.0267) are less likely to approve cash incentives for blood donation but these coefficients demonstrate that there is no statistically significant relationship.

The second model is a little bit different compared to the first model. We probit female, age, education, marital status, occupation, community, household, instead of using ownership durables as we did in first model, we use wealth index variable and country on acceptability of cash payment for blood donation. Similar to 1st model female are less likely to approve cash incentives for blood donation. Females hold negative sign of coefficients (-0.0170) which present that there is statistical significance and the negative sign support our initial assumption. That is compared to males; female's acceptability of cash incentives for blood donation is 1.7% lower.

For the age at which full education has been completed (0.000244), individuals are more likely to approve cash incentives for blood donation. From young to adult individuals refer to their age (-0.0040993) the coefficents show that they are less likely to accept cash incentives for blood donation and yet effect is statistically significant.

In the 2nd model, compared to married individuals we found that singles and divorced individuals are more likely to accept cash payment for blood donation and there is statistically significant with 0.0311 and 0.0282 respectively coefficients. For employed and self-employed individuals with their respectively coefficients 0.00138 and 0.0131, show that there is no statistical signficance and individuals are more likely to approve cash incentives for blood donation.

Individuals who live in town are more likely to approve cash incentives for blood donation and their coefficients (0.00724) are not statistically significant to our theory. Household individuals, their margin (0.00285) shows that there is no statistical signficance and they are more likely to accept cash payment for blood donation.

The results presented in Table 4 , the baseline country is Austria. Except indiciduals who live in Czech Republic, Latvia and Romania with their respectively coefficients 0.0246, 0.00253 and 0.00678 they are more likely to approve cash incentives for blood donation, but other individuals from Luxembourg, Sweden, United Kingdom, Italy, Spain, Protugal, Ireland, Finland, Germany, Hungary, Danmark, Slovania, Slovakia, Poland, Netherlands, Malta, Lithuania, Latvia, Greece, Cyprus Republic, France, Estonia, Croatia Bulgaria and Beligium are less likely to approve cash incentives for blood donation, and there is strongly statistically significant based on their margin coefficients obtained in Table 4.

Individuals who have higher scores on wealth index, are less likely to accept cash incentives for blood donation. Their margin coefficient (-0.000562) demonstrates that there is no statistically significant.

The 3rd model, we probit female, age, education, marital status, occupation, community, household, wealth index and GDP per capita on Cash (acceptability of cash for blood donation). In this model most of the coefficients of all variables obtained in Table 4, indicate that there is statistically significant relationship between our variables of interest and acceptability of cash to our assumption.

Similar to first two models, females (-0.0177) are less likely to approve cash incentives and they have strongly positive effect. This effect is quantitatively important and statistically significant. About the individual's age (-0.0040998) from young to old are less likely to acccept cash incentives and there is statistical significance. An addition, the age at which full education has been completed individuals don't accept cash payment for blood donation. Their t-statistic (3.04) indicates that there is strongly statistical significance.

To the marital status, single and divorced individuals are more likely to approve cash incentives for blood donation, and their respectively coefficients (0.0303 and 0.0351) are strongly statistically significant in this model compared to the two previous models.

Employed and self-employed individuals with their respectively margins of coefficients (0.0209 and 0.0246) represent that there is statistically signficant and they are more likely to approve cash payment for blood donation. Individual who live in town are more likely to approve cash payment at this margin of 0.00824. But, the effect is not statistically significant . In the 3rd model, there is marginal negative effect to individuals who have higher scores on wealth index; this coefficient (-0.00647) shows that those individuals could not accept cash incentives and that coefficients demonstrate that there is statistically signficant based on our initial assumption.

Also, as the GDP per capita increase as individuals who are less likely to accept cash incentives decreases as the coefficient of GDP per capita is -0.00000227. Also, the effect is statistically significant at 5% significance level. Therefore, we can derive that GDP per capita of each country is statistically significant determinant of attitude towards blood donation. That is, in high GDP per capita countries, potential donors' interest in monetary incentives falls.

4. CONCLUSION

Obviously there are many factors which motivate blood donors during blood donation process. Materials incentives can be a policy tool for increasing blood donor recruitment. Yet, since Titmuss, (1970) [50] criticisms against the use of monetary incentives remained controversial. We can say that incentivizing blood donation may have or may not have unintended consequences depending on how the incentives are perceive in the society.

On the basis of our findings, we examined how selected material incentives especially cash incentives are perceived generally over 27 868 EU individuals and its survey conducted in October 2014.

In particular the aim is to investigate whether individuals are discouraged or encouraged by incentives in response to donating blood. These reactions were assessed within our response variables such as demographic groups, social economics variables, wealth index, blood donation sites (countries) and GDP per capita by using probit regression analysis model in order to compare their t-statistic results, marginal effect and coefficients.

Thereafter, we used three models in order to test if our results are statistically significant. Under the first treatment model, we analyzed the effect of demographic groups (female, education, and marital status), Social economics variables (occupation, community, household, ownership durables) and blood donation sites (country) on acceptability of cash incentives.

The results indicate that overall many individuals do not approve cash incentives. An example of female, the coefficients of female (-0.0174) is strongly statistically signficant, which means females' coefficients signs related to our theory as negative correration with monetary incentives. Compared to males, females are less likely to accept monetary incentives. This is in line with findings of Johannesson & Mellstrom (2008). Contrary in Education, Occupation (employed and self-employed individuals) and some countries like Czech Republic, Latvia and Romania increase number of individuals for blood donations if cash incentives are offered.

In the second control model, we assessed of how cash incentives effect, changes with blood donation preferences through our response variables. The individuals who have higher scores on wealth index (ownership of durables) are less likely to accept cash incentives. The results show that there is marginal positive effect to the individuals who have higher scores on wealth index; its coefficient (-0.0064) indicates that it's statistically signficant based on our initial assumption.

In the third model we run of how GDP per capita influence attitude toward incentives for blood donation. All individuals in high GDP per capita countries reported that they are less likely to accept cash for donating blood. That is, in high GDP per capita countries, potential donors' interest in monetary incentives falls. Therefore we can conclude that in high GDP per capita countries, altruism could be emphasized more often than monetary incentives for blood donation. In line with this, almost developed countries have better functioning systems of non-remunerated blood donation.

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