

Zakat Payment Behavior Based on Marital Status Mobility: Statistical and Economic Approach

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ABSTRACT

This study aims to answer whether there is an impact on the willingness to pay zakat from changes in one's social status. Social status in this study is the mobility of marital status, either from single to married, or from married and then divorced. Several supporting variables are included as per capita consumption, level of religiosity, preference for halal products, loan or credit status, and controlled by the religious variable by the Muslim group. However, to prove this opinion as well as to answer the question, this study utilizes panel data from IFLS 4 and IFLS 5. By using the Double Difference method, this study will address the description of changes and to find a margin of difference between groups that were previously single and then married and from married to divorced. Meanwhile, the estimation results of this study have implications for the policies and strategies of amil zakat institutions to adjust the behavior of zakat consumers based on changes in their social status. Therefore, the evaluations on changes and mobility of a person's social status will make strategic management and marketing patterns more specific. In addition, understanding the pattern of social mobility is part of the process of making zakat products more dynamic.

Keywords: Social Mobility, Zakat Behavior, Double Difference

Introduction

Maulana (2020) argues that there are still many muzakki who do not issue their zakat. This relates to one of the factors that influence an individual's decision to pay zakat, namely income conditions. Income is often associated with a person's ability and intention to pay zakat (Arsyianti & Kassim, 2016; I. Beik & Alhasanah, 2012; Mastromatteo & Russo, 2017). When income increases, the possibility of someone to pay zakat will increase and vice versa. Therefore, a person's financial condition is also the cut-off of a person who is said to be obligated to pay zakat or to receive zakat.

In development economics, income is often used as an indicator of standard of living (A. Sharma, 2015). Changes in the standard of living can be interpreted as a change in income for certain individuals. Though changes in income are very possible, because many factors cause changes in individual income. Changes can occur due to economic factors and social factors.

In this study, changes in income will be tested due to social mobility originating from marriage and divorce which ultimately affects the intention to pay tithe. Putrisari (2019) revealed that economic welfare can be reflected in income, employment status, and changes in marital status. In relation to marital status, there is quite a phenomenon in Indonesia called marital dissolution or divorce. Based on data obtained from the Central Statistics Agency and the Director General of the Religious Courts of the Supreme Court in the 2016-2021 period, the average divorce rate rose 3 percent per year. This increase in divorce rates will theoretically reduce income for individuals. The following are some studies that show that there is a decrease

in the income of a divorced person bercerai (Gadalla, 2008; Leopold, 2018; A. Sharma, 2015) especially in women (Corcoran, 1979; Hoffman & Duncan, 1988; Holden & Smock, 1991).

Research on the impact of divorce on welfare levels conducted in various countries uses panel data and longitudinal panels which are estimated using fixed effect regression and panel regression panel (Leopold, 2018; S. S. Sharma, 2011; Zagorsky, 2005). Meanwhile, the impact of divorce on income levels in this study will be analyzed using another approach from previous studies, namely impact evaluation. There are two tools that are often used in research to see the impact of a program/policy, namely the Propensity Score Matching (PSM) and Difference-in-Difference (DID) methods. PSM is used to determine areas of common support and affected observations (treated) and control observations (control) by pairing individuals who are divorced and individuals who are not divorced based on the similarity of the propensity score which is the probability of the individual being divorced. The probability is based on the individual characteristics such as years of schooling, age, gender, and location of residence. Furthermore, the results from PSM, namely individuals who enter the common support area will be used as a sample in estimating the impact of divorce on income levels using DID.

Through various studies and theories that have been mentioned, it shows that divorce can have an impact on decreasing income. Therefore, research related to the impact of divorce on income levels and zakah intentions needs to be done to find out whether the theory and research are valid. To support the main hypothesis, namely that social mobility has an impact on the intention to pay zakat, this study adds a variable of religiosity. Obedience in carrying out religious orders is also often a factor that affects individuals in paying zakah (I. S. Beik & Arsyianti, 2016; Mohamad & Huda, 2010; Nola et al., 2019). Religiosity can also be an antithesis of the effect of income on tithe intentions.

The variables of education and personal debt are also used in this study as one of the control variables. Education can influence a person's decision to pay zakat (I. Beik & Alhasanah, 2012; Choi & Chou, 2010; Mastromatteo & Russo, 2017). Individuals with higher education have a slope coefficient twice as large as individuals with lower education (Mastromatteo & Russo, 2017). The higher a person's education, the sense of sensitivity to the difficulties of others grows (altruism), so he will pay zakat on the basis of wanting to lighten the burden of the mustahik he gives. Meanwhile, debt has a relationship with the intention to pay tithe. The greater the debt owned or borne by a person, the lower the possibility of tithing (Arsyianti et al., 2018; I. S. Beik & Arsyianti, 2016; Mohammed, 2011). This is because debt will reduce a person's earning capacity. Debt will reduce a person's intention to give zakat, because they tend to think first for dependents or obligations compared to giving others.

This study aims to combine the phenomenon of development with the existing potential of zakat. In the study of economic development, especially in the study of households, the level of welfare is the main goal of development. If the household as one of the smallest economic units can achieve prosperity, then in aggregate it can be used as a reflection of broad economic development. This study was compiled using the probit model used by Maulana (2020) and utilizing the economic model of the impact evaluation of divorce conducted by Putrisari (2019). The Probit model will produce a binary cut off of the probability of the intention to tithe. Meanwhile, the impact evaluation carried out was evaluating the impact of social mobility due to divorce on individual income.

The difference between this study and the two previously mentioned studies is that the control variables used are debt ownership, education, and religiosity. Maulana (2020) uses three categories of education, namely not attending school, graduating from primary education, and higher education. While in this study, ordinal data is used which divides education by level based on the length of travel time of education starting from the zero year of schooling. Meanwhile, debt ownership in this study uses the total debt from both formal and non-formal financial institutions. And finally religiosity is measured based on a study by Ranganathan & Henley (2008) using self-perceived religiosity, namely a person's assessment of his own faith. As a final note, this study uses secondary micro data from trusted survey institutions with individual and household data classification units.

Material and Methods

Methods PSM & DID as integral of Impact Evaluation

Differences in Differences estimation in this study was carried out by using panel data. It requires data availability in the baseline period which in this study is the IFLS 4 data. Estimation is done by measuring the outcomes and covariates for groups of individual pay for zakat and households who are not pay for zakat before. The fixed effects panel regression model is used to maintain the time-invariant heterogeneity that cannot be observed and the heterogeneity of observable characteristics over many periods. Khandker and Houghton (2009) explained DD estimation with the fixed efficiency panel regression model in an equation as follows:

$$Y_{it} = \phi Y_{it} + \delta X_{it} + \eta_{it} + \varepsilon_{it} \quad (1a)$$

$$(Y_{it} - Y_{it-1}) = \phi(Y_{it} - Y_{it-1}) + \delta(X_{it} - X_{it-1}) + (\eta_i - \eta_i) + (\varepsilon_{it} - \varepsilon_{it}) \quad (1b)$$

$$\Delta Y_{it} = \phi \Delta T_{it} + \delta \Delta X_{it} + \Delta \varepsilon_{it} \quad (1c)$$

The equation above explains that the Y_{it} outcome can be estimated in T_{it} treatment with X_{it} covariates and time-invariant heterogeneity that cannot be observed by η_i which is well-correlated with treatment or other characteristics that cannot be observed by ε_{it} . Decreasing equation 1a is done considering the change in time and generate equation 1b. Keep in mind that heterogeneity of η_i is time-invariant, so the variable is excluded from the equation. The treatment impact is ϕ with ordinary least square (OLS).

The Data

The data used in this study were obtained from the Indonesian Family Life Survey (IFLS) 4 and 5 waves. The IFLS data is a longitudinal survey data or micro survey data that includes individual, household, and community data in Indonesia. IFLS data is collected and compiled by the RAND Corporation based on a household survey conducted in 13 out of 27 provinces in Indonesia. The 13 provinces are DKI Jakarta, West Java, East Java, South Kalimantan, South Sulawesi, South Sumatra, West Nusa Tenggara, Central Java, D.I Yogyakarta, Bali, North Sumatra, West Sumatra, and Lampung. The survey results generated a sample representing approximately 83% of the Indonesian population and contained more than 30,000 people living in 13 of the 27 provinces.

This research uses two quantitative approaches, so a comprehensive operational explanation of variables is needed. The Double Differences methods require the use of two

types of variables. The variables have been selected based on relevant theories and previous research therefore it is sufficient to present the research needs to find out the effect of access to credit on poverty status change at the household level in Indonesia. The two types of variables are the dependent variable and the independent variable. In the model, the dependent variable is the intention to pay zakah dummy meanwhile the independent variable consists of 3 control variables, namely the consumption expenditure as proxy for income, religiosity, and individuals education level.

Results and Discussion

Statistical Review

Figure (1) shows a good balancing test result because visually there are many overlapping areas between groups of individuals who pay zakat and those who do not pay zakat (Caliendo & Kopeinig, 2008; Khandker et al., 2010; Khandker & Haughton, 2009). Table (2) shows the control variables that explain the general factors of the individual's intention. Of all control variables showed significant values in statistics.

Table 1. This table shows the inferior bound, the number of treated and the number of controls for each block

Inferior of Block of Propensity Score	Dummy for Intention to Pay Zakah		Total Population
	Didn't Willing to Pay Zakah	Willing to Pay Zakah	
0.8	704	5.818	6.522
0.9	247	2.349	2.569
0.925	82	1.156	1.238

Tabel 2. Propensity Score Regression for Intention to Pay Zakah

Variables	Income	Education	Personal Debt	Constanta
Intention to Pay Zakah	0.0576* (0.0453)	0.0169** (0.026)	-0.397*** (0.000)	1.914 (0.019)
Matching Observation	10.356	Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1		

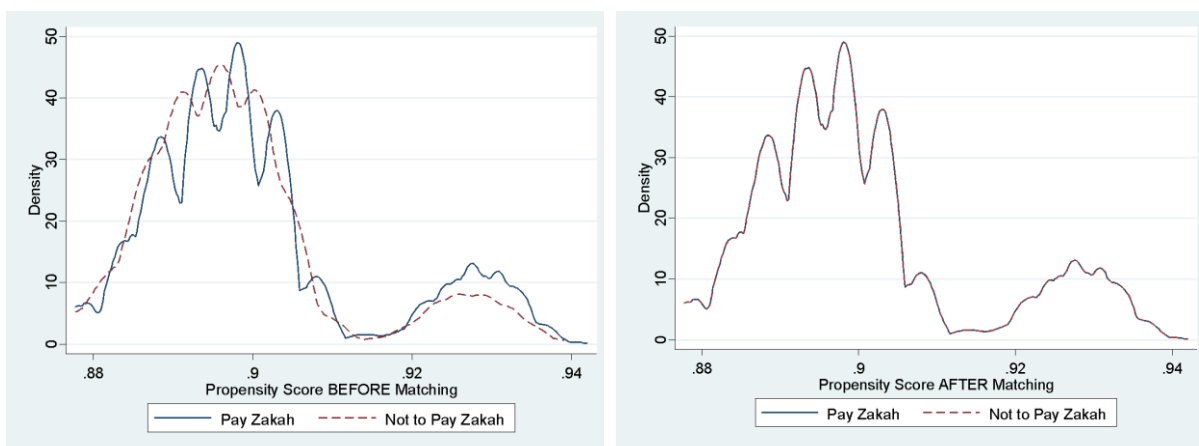


Figure 1. Matching Area of Both Zakah Intention Criteria

Table 2 above presents the results of the propensity score based on the value of the match between the characteristics of individuals who pay zakat and those who do not pay zakat. Based on the characteristics and behavior that are equated, it is known that income has a significant effect on the intention to pay zakat. The statement is based on the significance value of $P > |Z|$ which is worth 0.045, which is smaller than alpha ($\alpha = 5\%/0.05$). In addition to income, two other variables, namely education and personal debt, significantly affect individual behavior in paying zakat. People who have debt tend to reduce their intention to pay zakat. This can be seen from the value of the coefficient of change which is negative, which means that when the debt owed is getting bigger or bigger, it will reduce a person's intention to pay zakat.

This study wants to examine whether social mobility due to marriage and divorce can affect the intention to pay zakat among Muslims in Indonesia. Based on statistical and econometric estimates using the double differences model, the results can be seen from Table 3. In the table below it is known that there is a gap in the t-score value of -0.064 which means that between married and unmarried individuals there is a difference in the intention to pay zakat by 6.4 percent. The t-score can be interpreted as an increase in the desire to pay zakat which is much greater in groups of individuals who were single and then married (social mobility) than groups of individuals who are not married or are single (Khandker et al., 2010). The shift in social status has an impact on an increase in intention to pay zakat by 6.4 percent.

Table 3. Getting married can increase the intention to pay Zakah

Group	Observation	Mean	Std. error	Std. Dev
Not to Pay	6.200	0.916	0.035	0.276
Pay Zakah	6.284	0.918	0.001	0.134
Differences Both the Group		-0.064	0.003	
Degree of Freedom:	12482			
Ho: mean(0) - mean(1) = diff = 0				
Ha: diff < 0	Ha: diff != 0	Ha: diff > 0		
Pr(T < t) = 0.0000	Pr(T > t) = 0.0000	Pr(T > t) = 1.0000		

Table 4. Divorce can Lower Intention to Pay Zakah

Group	Observation	Mean	Std. error	Std. Dev
Not to Pay	6.284	0.981	0.001	0.134
Pay Zakah	1.373	0.909	0.000	0.286
Differences Both the Group		0.071	0.05	
Degree of Freedom:	7655			

Ho: mean(0) - mean(1) = diff = 0		
Ha: diff < 0 Pr(T < t) = 1.0000	Ha: diff != 0 Pr(T > t) = 0.0000	Ha: diff > 0 Pr(T > t) = 1.0000

Meanwhile, Table 4 above shows the characteristics of the two groups who are not divorced (still married) and divorced. Groups of individuals who carry out social mobility, namely divorce, have a smaller intention to pay zakat or experience a decrease of 7.1 percent. The T-score obtained shows that if a person is divorced, the probability of tithing decreases. So that based on the t-score estimation in the double differences model, information is obtained, namely when there is a change in social status in social mobility, it will have an impact on increasing and decreasing individual intention to pay zakat among several groups of individuals who are single, then married, and vice versa.

Table 4. Double Differences Regression Simple and Full Model of Intention to Pay Zakah for Both Social mobility

VARIABLES	Simple DID		Full Model DID	
	Menikah	Bercerai	Menikah	Bercerai
Year	0.420** (0.182)	2.475*** (0.286)	0.268 (0.189)	1.589*** (0.236)
Interaction	1.264*** (0.210)	-1.528*** (0.233)	1.148*** (0.218)	-1.019*** (0.207)
Income	-0.255* (0.144)		-0.164 (0.148)	
Education			0.0378*** (0.0113)	0.0871*** (0.0195)
Personal Debt			0.414*** (0.138)	0.956*** (0.268)
Constant	3.402*** (0.341)	2.794*** (0.377)	2.577*** (0.362)	1.377*** (0.297)
Observations	12,482	7,657	12,293	7,471
Number of Individual	8,407	7,324	8,320	7,153

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Estimation of Difference in Difference (DD) is done as a step to get the counterfactual value on outcomes. Two groups of individuals who have similar characteristics, namely individuals who make changes in social status in the form of marriage or divorce will be compared their respective outcomes in the period before marriage and after marriage or before divorce and after divorce. Control variables were also included in the DD test to obtain the net effect of changes in social status on the intention to pay zakah (outcomes). The use of random effects is carried out to control for individual characteristics that cannot be observed and time variants that can affect the value of outcomes (Khandker et al., 2010).

Double Differences (DD) Test with Propensity Score Matching (PSM) will be applied to 10,356 individuals who have similar propensity scores. This amount was obtained from PSM estimates by setting aside 11,528 households. The results of the estimation of DD by going through the PSM estimation first in table (4) show that the majority of the dependent variables are affected by changes in social status either because of marriage or because of divorce. In the intention to pay zakat model, the main variable has a negative impact on the divorced group and a positive impact on the married group. The impact is indicated by a negative probability margin in the “interaction” row in table (4) or $Tit \times t$ in the research model. This means that there is a change in the probability of people paying their zakat because it is close to one for every increase in the probability of a change in social status in each individual group (Figure 2 and Figure 3).

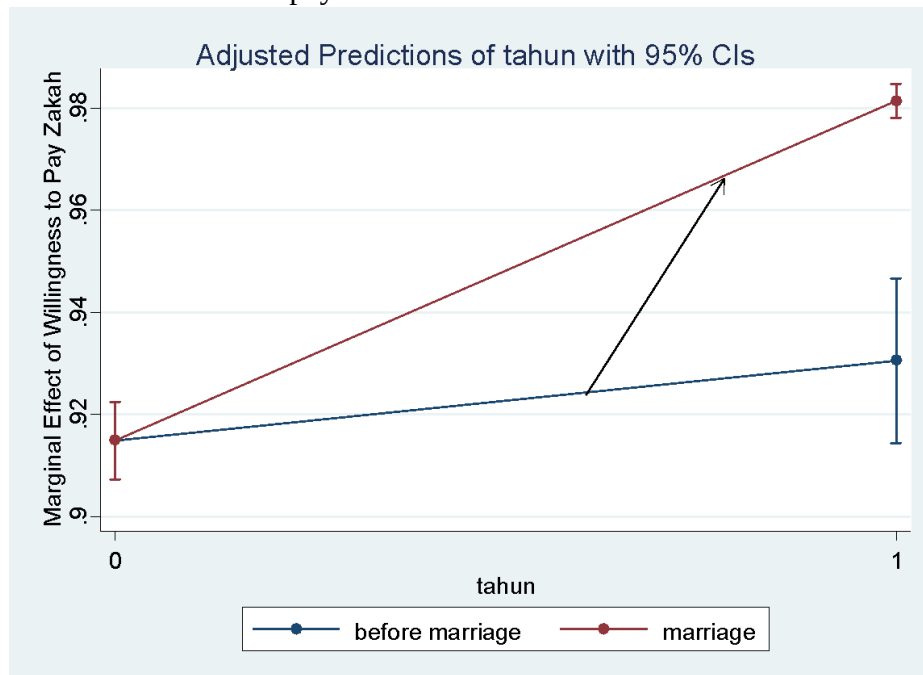
Based on the results of the PSM and DD analysis, it was also found that the variables of education and personal debt were proven to have a significant effect on the intention to pay zakat in all groups of individuals who experienced social mobility (married and divorced). Especially for income, it only has a significant effect on groups of individuals who are married. In the group of individuals who are divorced, there is no effect on the intention to pay zakat. This means that groups of individuals who were previously single and then married will decrease their intention to pay zakat when viewed from the amount of income obtained. This condition in general, has not been studied based on the separation of gender groups (male and female).

Meanwhile, other control variables, namely education and personal debt, have two effects on the intention to pay zakat. Education has been shown to have a positive effect on intention to pay in all groups of individuals. No matter certain individuals experience social mobility, the higher a person's education, the greater the intention to pay zakat. These results are similar to findings from Choi & Chou (2010), Beik & Alhasanah (2016), Mastromatteo & Russo (2017) which say that increasing a person's education will open horizons of knowledge and understanding of zakat so that they will be obedient and willing to pay their zakat. This is because most people who are getting better educated understand that zakat is not only religious guidance, but furthermore there are economic and social impacts arising from the nominal money they give zakat.

Debt has a negative relationship to the intention to pay zakat. Someone who has debt tends to decrease his intention to pay tithe. According to Arsyianti & Kassim (2015), Arsyianti et al (2016) and Mohammed (2011) someone who has debt will have much larger dependents than those who do not have debt. Because they have debt, someone will prioritize allocating their income to pay debts first rather than giving their zakat to others.

Conclusion

Statistical and Economic Analysis conducted in the form of a simple and full double difference model proved to be able to support the purpose of this study, that changes in social status (social mobility) in the form of changes in marital status affect the intention to pay zakat on individuals who are Muslim. This means that individuals who make changes in social status will have the opportunity to change their wishes to pay zakat. In the group of individuals who were previously single, then married, the intention to pay zakat will increase as we can see in Figure 2 where it can be seen that the blue line has shifted to a red line, which means that there is an increase in the intention to pay zakat in married individuals.



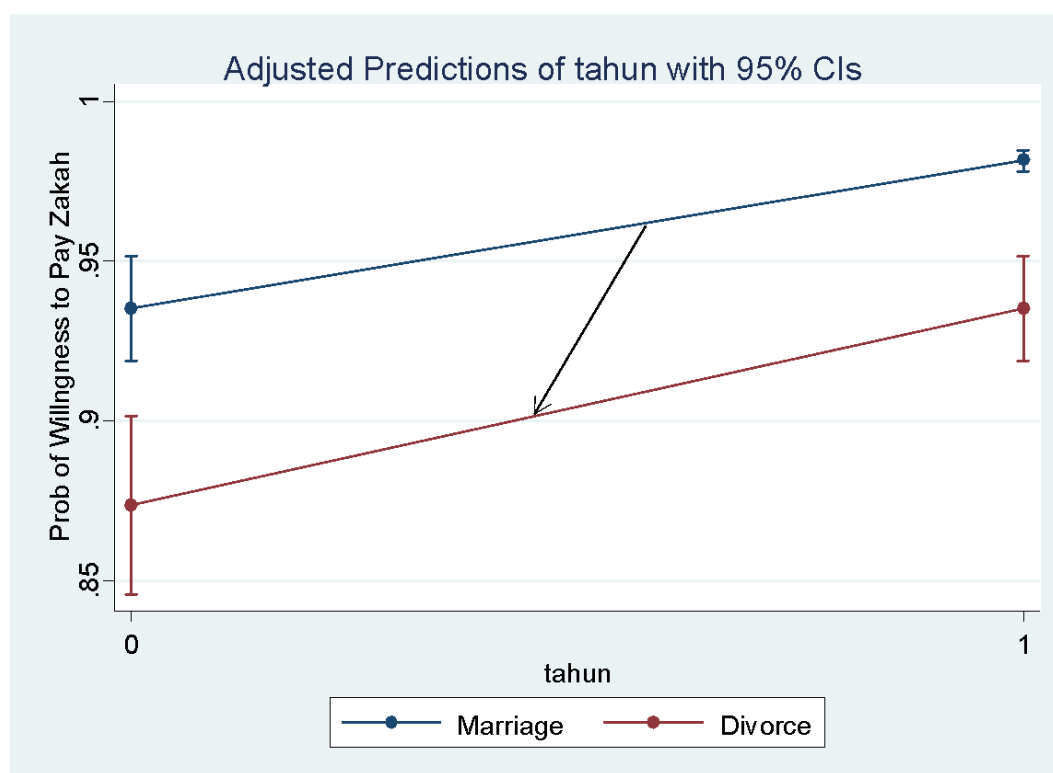
Slanly (2003) supports this finding, that someone who intends to have a family is actually building family social capital - family ties capital - which is better known as a special type of social capital. Families can develop the capacity to cooperate in altruistic actions, strengthen trust and contribute to increasing the intensity of social networks which in turn increase social capital. the following is a quote from Slanly (2003):

“The family is the most powerful social capital; its formation is and should be the most important type of investment in social capital.”

Meanwhile, Kocik (2006) argues also if the family or the decision to have a family closely with the meaning of the family motivates economic, social and cultural activities. Furthermore, in the family, there is strengthening between one member and another. One of these strengthening is on the economic side. If before getting married the source of income only came from one individual, then after marriage it is possible to have joint income between husband and wife. So that resistance to household economic shocks is more manageable.

Then the second finding that can be concluded is that divorce, where there is a change in social status, which was initially married and then separated or divorced, has negative implications for the intention to pay zakat. Figure 4 shows that there is a shift in the curve from

the marriage curve (blue curve) to lower towards the bottom (red curve). This means that divorce has an impact on the decrease in intention to pay zakat in the sample of this study.



There are various studies and studies that state that divorce can have various impacts, both psychologically and economically. Psychologically the impact of divorce in the form of emotional pressure for divorced individuals raises anxiety, especially if the divorced individual has children, it can lead to a tendency for children to divorce in the future (Zedadra et al., 2019).

Meanwhile, the economic consequences caused by divorce are indicated by changes in the standard of living or changes in the welfare of the individual. Economic consequences are shown in the form of changes in standard of living, changes in assets, and income for both men (Gadalla, 2008; Leopold & Kalmijn, 2016; A. Sharma, 2015) and divorced women (Leopold & Kalmijn, 2016; A. Sharma, 2015). Leopold (2016) states that the change in living standards in question is the risk of a tendency to become poor in the year at the time of divorce. Divorce is even discussed in a broader and macro scope. According to Baranowski & Sztadynger (2019) even in Europe, divorce has an impact on changes in GDP broadly, so ways and programs are sought so that individuals and families do not experience divorce. This is what later supports the answer that statistically divorce affects the intention to pay zakat and reduces individual welfare.

References

- Arsyanti, L. D., & Kassim, S. (2016). Regular charity giving behaviour among low-income households in Indonesia. *Intellectual Discourse*, 24(1).
- Arsyanti, L. D., Kassim, S., & Adeyemi, A. A. (2018). Debt Taking And Charity-Giving Among Low-Income Households: Strengthening Resilience In Islamic Perspective. *Journal of Islamic Monetary Economics and Finance*, 4(1), 1–22.
- Baranowski, P., & Sztadynger, J. J. (2019). Marriage, divorce and economic growth. *Annales. Etyka w Życiu Gospodarczym*, 22(1), 53–67.
- Beik, I., & Al Hasanah, I. (2012). Analisis Faktor-Faktor Yang Mempengaruhi Tingkat Partisipasi Dan Pemilihan Tempat Berzakat Dan Berinfak. *Jurnal Ekonomi & Keuangan Islam*.
- Beik, I. S., & Arsyanti, L. D. (2015). Construction of Cibest Model As Measurement of Poverty and

- Welfare Indices From Islamic Perspective. *Al-Iqtishad: Journal of Islamic Economics*, 7(1), 87–104. <https://doi.org/10.15408/ijies.v7i1.1361>
- Beik, I. S., & Arsyanti, L. D. (2016). MEASURING ZAKAT IMPACT ON POVERTY AND WELFARE USING CIBEST MODEL. *Journal of Islamic Monetary Economics and Finance*. <https://doi.org/10.21098/jimf.v1i2.524>
- Caliendo, M., & Kopeinig, S. (2008). Some practical guidance for the implementation of propensity score matching. *Journal of Economic Surveys*, 22(1), 31–72.
- Choi, N. G., & Chou, R. J.-A. (2010). Time and money volunteering among older adults: the relationship between past and current volunteering and correlates of change and stability. *Ageing & Society*, 30(4), 559–581.
- Corcoran, M. (1979). The economic consequences of marital dissolution for women in the middle years. *Sex Roles*, 5(3), 343–353. <https://doi.org/10.1007/BF00287401>
- Gadalla, T. M. (2008). Impact of marital dissolution on men's and women's incomes: A longitudinal study. *Journal of Divorce & Remarriage*, 50(1), 55–65.
- Haughton, J., & Khandker, S. R. (2009). *Handbook on Poverty+Inequality*. The World Bank.
- Hoffman, S. D., & Duncan, G. J. (1988). What are the economic consequences of divorce? *Demography*, 25(4), 641–645.
- Holden, K. C., & Smock, P. J. (1991). The economic costs of marital dissolution: Why do women bear a disproportionate cost? *Annual Review of Sociology*, 17(1), 51–78.
- Khandker, S. R., & Haughton, J. (2009). *Handbook on poverty and inequality*. World Bank.
- Khandker, S. R., Koolwal, F. G. B., & Samad, H. A. (2010). *Handbook on Impact Evaluation: Quantitative Methods and Practices*. World Bank.
- Kocik, L. (2006). *Rodzina w obliczu wartości i wzorów życia ponowoczesnego świata*. Oficyna Wydawnicza AFM.
- Leopold, T. (2018). Gender differences in the consequences of divorce: A study of multiple outcomes. *Demography*, 55(3), 769–797.
- Leopold, T., & Kalmijn, M. (2016). Is divorce more painful when couples have children? Evidence from long-term panel data on multiple domains of well-being. *Demography*, 53(6), 1717–1742.
- Mastromatteo, G., & Russo, F. F. (2017). Inequality and charity. *World Development*, 96, 136–144.
- Maulana, R. (2020). Perilaku Individu dalam Berzakat: Pengaruh Income dan Elastisitasnya. *Equilibrium Jurnal Ekonomi Syariah Vol. 08 No, 1*, 1–24.
- Mohamad, H., & Huda, N. (2010). *Lembaga Keuangan Islam Tinjauan Teoritis Dan Praktis*. Jakarta: Kencana Prenada Media Group.
- Mohammed, M. O. (2011). Economic Consumption Model Revisited: Infaq Based on Al-Shaybani's Levels of Al-Kasb. *International Journal of Economics, Management and Accounting*, 19(3).
- Nola, I., Pascasarjan, P., Halu, U., Aedy, H., Oleo, U. H., Bachmid, G., & Oleo, U. H. (2019). *Jurnal Progres Ekonomi Pembangunan (JPEP) Page : 16-26 Jurnal Progres Ekonomi Pembangunan (JPEP) Volume 4 , Nomor 1 (2) , Tahun 2019. 4(2)*, 16–26.
- PUTRISARI, S. D. W. I. (2019). *DAMPAK PERCERAIAN TERHADAP TINGKAT PENDAPATAN DI INDONESIA TAHUN 2007-2014*. Universitas Airlangga.
- Ranganathan, S. K., & Henley, W. H. (2008). Determinants of charitable donation intentions: a structural equation model. *International Journal of Nonprofit and Voluntary Sector Marketing*, 13(1), 1–11.
- Sharma, A. (2015). Divorce/separation in later-life: A fixed effects analysis of economic well-being by gender. *Journal of Family and Economic Issues*, 36(2), 299–306.
- Sharma, S. S. (2011). Determinants of carbon dioxide emissions: Empirical evidence from 69 countries. *Applied Energy*, 88(1), 376–382. <https://doi.org/10.1016/j.apenergy.2010.07.022>
- Slany, K. (2003). Dylematy i kontrowersje wokół małżeństwa i rodziny we współczesnym świecie. *J. Balicki, E. Frątczak, J. Hryniewicz, A. Jagielski, JT Kowaleski, K. Siany, Wybrane Problemy Współczesnej Demografii. Łódź: Zakład Demografii Uniwersytetu Łódzkiego*.
- Zagorsky, J. L. (2005). Marriage and divorce's impact on wealth. *Journal of Sociology*, 41(4), 406–424.
- Zedadra, O., Guerrieri, A., Jouandeau, N., Seridi, H., Fortino, G., Spezzano, G., Pradhan-Salike, I., Raj Pokharel, J., The Commissioner of Law, Freni, G., La Loggia, G., Notaro, V., McGuire, T. J., Sjoquist, D. L., Longley, P., Batty, M., Chin, N., McNulty, J., TVERSK, K. A. A., ... Thesis, A. (2019). No 主観的健康感を中心とした在宅高齢者における健康関連指標に関する共分散

構造分析Title. *Sustainability* (Switzerland), 11(1), 1–14.
http://scioteca.caf.com/bitstream/handle/123456789/1091/RED2017-Eng-8ene.pdf?sequence=12&isAllowed=y%0Ahttp://dx.doi.org/10.1016/j.regsciurbeco.2008.06.005%0Ahttps://www.researchgate.net/publication/305320484_SISTEM_PEMBETUNGAN_TERPUSAT_STRATEGI_MELESTARI