

Chi-square association test for microfinance-*Waqf*: Does business units ownership correlate with cash *Waqf* collected?

Cite as: AIP Conference Proceedings 2329, 060004 (2021); <https://doi.org/10.1063/5.0042168>
Published Online: 26 February 2021

Siti Nur Indah Rofiqoh, Raditya Sukmana, Ririn Tri Ratnasari, Siti Maghfirotul Ulyah, and Muhammad Ala'uddin



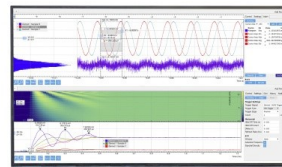
View Online



Export Citation

Challenge us.

What are your needs for periodic signal detection?



Zurich Instruments



Chi-Square Association Test for Microfinance-*Waqf*: Does Business Units Ownership Correlate with Cash *Waqf* Collected?

Siti Nur Indah Rofiqoh^{1,3,a)}, Raditya Sukmana^{1,b)}, Ririn Tri Ratnasari^{1,c)}, Siti Maghfirotul Ulyah^{2,d)} and Muhammad Ala'uddin^{3,e)}

¹Department of Islamic Economics, Faculty of Economics and Business, Universitas Airlangga, Surabaya, Indonesia

²Department of Mathematics, Faculty of Science and Technology, Universitas Airlangga, Surabaya, Indonesia

³Department of Sharia Banking, Islamic University of Qomaruddin, Gresik, Indonesia

^{c)}Corresponding author: ririnsari@feb.unair.ac.id

^{a)}fiqoh_moslem@yahoo.com

^{b)}raditya-s@feb.unair.ac.id

^{d)}maghfirotul.ulyah@fst.unair.ac.id

^{e)}damascuster@gmail.com

Abstract. Cash endowment (cash *waqf*) via microfinance-*waqf* institutions begins to be popular among Muslims. As managers, microfinance-*waqf* institutions are responsible for maximizing the *waqf*'s productivity development programs and its collection to achieve equitable welfare. The purpose of this study is to examine the correlation between business unit ownership and the amount of endowment funds collected by microfinance-*waqf* institutions. What are the development programs that are of interest to the community while at the same time satisfying the donors (*waqifs*)? To achieve the objective of the study, we used a statistical analysis model of two categorical variables within microfinance-*waqf* institutions. A total of 27 microfinance-*waqf* institutions have been interviewed about both their acquisition of cash *waqf* and their business unit licenses. Chi square test results show that microfinance-*waqf* institutions' ownership of business units does not correlate with the amount of *waqf* funds they collected.

INTRODUCTION

In Islam, cash *waqf* is a social humanitarian devotion to God [1, 2]. This devotion is characterized by the giving of fixed assets for the purpose of charity and equal wealth distribution of Muslims. As an endowment, cash *waqf* is more beneficial to the community because of the responsibility for its productivity and for the conservation of the principal assets. In Islam, cash endowment is bound by *jawaz* law exemplified by the Prophet Muhammad PBUH. Kuran [3] explains that *waqf* is one of social expenditures regulated in Law No. 41 of 2004, but there is no explicit rules in the Quran.

There are four special features of *waqf*. These are (1) Certificate of endowment pledge; (2) *Waqif* or donors; (3) *Waqf* assets (movable or immovable); and (4) Asset utilization. According to Cajee [4] *waqf* not only has a social expenditure dimension, but it is also able to improve the quality of Muslim empowerment because of the guaranteed perpetuity of the principal assets. The main objective of *waqf* devotion is to improve and strengthen social and economic conditions, both regionally and nationally.

Strengthening social and economic conditions will have an impact on good governance in society. Sabit [5] showed the relationship between cash *waqf* and its humanitarian benefits and its fulfillment of Islamic sharia objectives. Sabit[5] also suggested five developmental models of the devotion of *waqf* that can provide social and economic benefits, namely: (1) cash *waqf* for business capital financing; (2) endowments (*waqf*) through money are exemplified by changing money as assets into machine assets for productivity; (3) cash *waqf* for projects that benefit the development of public facilities, such as schools and hospitals; (4) cash *waqf* for purchasing sharia stocks and

channeling the margins to the poor; and (5) cash *waqf* for the acquisition of assets needed by the public such as markets and roads.

In order to guarantee the perpetuity, Sanep and Nur-Diyana [6], Iman [7] and Muhammad [8] stated that having business enterprises, business entities, corporations and entrepreneurial spirit is the main key to cash *waqf* development models. Businesses with social sensitivity can be the best model for developing cash *waqf* [9-11], but the model is scarcely applied (i.e. limited only in theory).

In addition to in-depth interviews, in order to analyze development programs that both attract the community and satisfy the donors (*waqifs*), both of which will help increase the collection of endowment (*waqf*) funds by microfinance-*waqf* institutions, the authors also used a statistical model to investigate the correlation between business unit ownership and the success of cash *waqf* collection. There are 142 microfinance-*waqf* institutions in Indonesia that are legally certified as *nazhirs* or *waqf* fund managers who carry out various *waqf* fund development programs (i.e. collection, management and distribution). The authors used purposive sampling technique for 27 microfinance-*waqf* institutions in East Java as primary data. Purposive sampling technique was chosen because East Java was selected as a priority province in the development of microfinance-*waqf* in Indonesia.

These 27 microfinance-*waqf* institutions also report their collection of *waqf* funds to the East Java Office of Cooperatives and Small and Medium Enterprises (SMEs) annually. The authors used the reports as a basis for comparing the primary data. The cross-tabulation analysis of the two categorical variables is a new approach. As the model determines, a modified quantitative descriptive approach requires an association test (i.e. chi-square test).

This paper is structured as follows. Section Two reviews selected literature that discusses cash *waqf* development programs and uses hypotheses in cross-tabulation analysis. Section Three explains the research methods. Then, Section Four and Five contain the findings, analysis, and the conclusion of the study.

LITERATURE REVIEW

Cash *waqf* is a perpetual donation of movable assets that are regulated in Government Regulations and Laws. Cash *waqf* can also be defined as a continuous virtue (*amal jariyah*), meaning the reward will continuously benefit the donor even after he dies. Because of these characteristics, microfinance-*waqf* institutions as the fund managers (*nazhirs*) that are responsible for the perpetuity and productivity of the endowment should attempt to create a program for developing and increasing the amount of cash *waqf* collected in several schemes. Choosing small-risk projects will maximize profits. Profits from these projects are then distributed to the recipients (*mauquf alaihs*), that is, the poor or other marginalized groups.

The collection of cash *waqf* funds by microfinance-*waqf* institutions can also reduce the cost of capital. As a source of funds for social financing (*qordh al-hasan* contract), cash *waqf* is also beneficial for microfinance liquidity. A scheme for collecting, managing and channeling the endowments (*waqfs*) is shown in Fig. 1. The figure shows long-term and short-term schemes for the development of *waqf* funds as outlined by Ajija et al. [12].

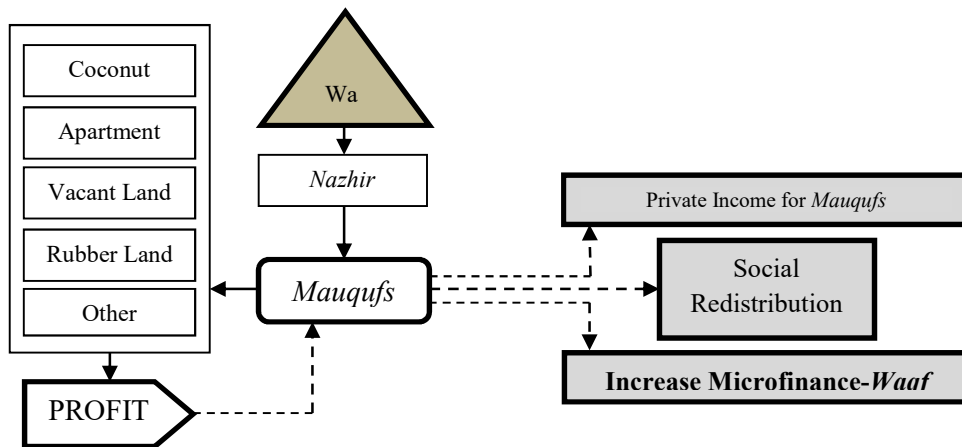


FIGURE 1. Waqif-Mawquf Alaihi-Nazhir relationship in Indonesia

As a multidimensional devotion (*ibadah*) as well as the linkages between economic and social sectors, *waqf* development by owning business entities is an innovation. The importance of business entities as an innovation of *waqf* development was supported by Dees et al. [13] who concluded that entrepreneurship is the key to achieving global economic goals. Successful entrepreneurs who have assets above the *nisab* limit (equivalent to 85 grams of gold) are required to pay *zakat maal* (around 2.5 percent of net business income in a year). This distribution of income increases the purchasing power of the poor.

Previous work by Kasri and Ramli [14] applied the concept of cash *waqf* to the entrepreneurial programs so as to generate benefits and profits. Balancing transactions are realized by procuring goods to be sold and then transacted again until the contract period ends. Here, the entrepreneurship concept is applied by renting the *waqf* properties, cultivating the *waqf* land (i.e., cash *waqf* conversion), building mini markets or stores, and other financing projects. Those are permitted to take multiple profits for cash *waqf*. The use of *mudharabah* or *musyarakah* schemes (in Hanafi jurisprudence) is to create profits and distribute cash *waqf*.

Study by Iman et al. [7] showed that creating corporate cash *waqf* will support the good corporate governance of productivity. It might have a significant role in the sustainability of cash *waqf* through business entity ownership. As a framework of cash *waqf* innovation, entrepreneurship has highlighted some prospects and challenges in finding new ground for developing cash *waqf* productivity. The economic outputs can be used to improve the society. Developing cash *waqf* by microfinance-*waqf* needs greater cooperation. Thus, the following hypotheses were developed:

- H₀ : Ownership of business entities has no relationship with the amount of cash *waqf*.
H₁ : Ownership of business entities has relationship with the amount of cash *waqf*.

METHOD

Descriptive statistical approach was used to analyze the development of microfinance-*waqf*. The cross-tabulation analysis was used to identify the factors that correlate with the amount of cash *waqf* collected. As a simple analysis, cross-tabulation explains the relationship between two categorical variables, namely business entities' ownership and the amount of cash *waqf* collected. Hypotheses will be tested to determine the relationship, whether it is positive or negative. The value of the correlation coefficient will indicate the strength of the relationship between variables. The requirements for associative hypotheses test are: (1) data in the form of data levels; (2) the sample size is greater than 20; and (3) the data frequency in cell is greater than one. The formula used in the chi-square calculation is as follows:

$$\chi^2 = \sum_{i=1}^r \sum_{j=1}^k \frac{(O_{ij} - E_{ij})^2}{E_{ij}} \quad (1)$$

where χ^2 is the chi-square statistic, O_{ij} is an observed frequency and E_{ij} is an expected frequency. The correlation coefficient formula is as follows:

$$C = \sqrt{\frac{\chi^2}{N + \chi^2}} \quad (2)$$

The sample size is notated by N , χ^2 is the *Chi-Square*, and C is the correlation coefficient.

Primary research data were analyzed using descriptive statistical approaches and cross-tabulation analysis. Validity test results are presented in Table 1, where the amount of cash *waqf* is classified to determine the category level.

TABLE 1. Microfinance-*Waqf* Category

Microfinance- <i>Waqf</i> category	Amount	Level category
Small cash <i>waqf</i>	Under <100 million rupiahs	1
Medium cash <i>waqf</i>	100 million - 300 million rupiahs	2
Large cash <i>waqf</i>	More than >300 million rupiahs	3
Category for microfinance- <i>waqf</i> institutions that develop cash <i>waqf</i> with entrepreneurship projects =1.0		

Based on Table 1, small cash *waqf* category consists of microfinance-*waqf* institutions that managed to obtain cash *waqf* under 100 million rupiahs and are categorized as Level 1. In medium cash *waqf* category are microfinance-*waqf* institutions that obtained *waqf* funds ranging from 100 million to 300 million rupiahs and are categorized as Level 2. In large cash *waqf* category are microfinance-*waqf* institutions that obtained *waqf* assets above 300 million rupiahs and are categorized as Level 3. These level categories are shown in Table 1 and based on the East Java Office of Cooperatives and SMEs report, 2018.

If a microfinance-*waqf* institution has business units and joint entrepreneurial responsibility programs with its members, then the microfinance-*waqf* institution is given a score of 1. Otherwise, it is given a score of 0. All score categories are used as the source of data in cross-tab analysis.

RESULTS

Descriptive statistical analysis of primary research data on 27 microfinance-*waqf* institutions in East Java is presented in Table 2. The grouping of microfinance-*waqf* institutions shows that microfinance-*waqf* Mandiri Sejahtera has acquired the largest cash *waqf* (36.6 percent of the total cash *waqf* of all microfinance-*waqf* institutions in East Java) followed by microfinance-*waqf* institution NU Sumenep (11.4 percent of total cash *waqf* of microfinance-*waqf* institutions in East Java).

TABLE 2. Demographic Aspects Analysis

Demographic aspects of managers (<i>nazhirs</i>)	No. of respondents	%
Gender		
Male	22	81.4
Female	5	18.6
Age		
25-29	3	11.1
30-39	7	25.9
40-49	6	22.2
> 49	11	40.7
Educational level		
Senior high school	8	29.6
Diploma or undergraduate degree	14	51.8
Master's degree	4	14.8
Doctoral degree	1	0.54

Table 2 also presents demographic characteristics, namely the gender, age, and education level of the endowment managers (*nazhirs*) and some general conclusions in percentages. Most respondents in large cash *waqf* level are male (81.4 percent). In terms of age, the managers (*nazhir*) are mostly above 49 years (40.7 percent). Most of the microfinance-*waqf* respondents are also relatively educated. The proportions of *nazhirs* with a bachelor's degree and senior high school levels are 51.8 percent and 29.6 percent respectively.

TABLE 3. Processing analysis summary

Processing Summary	N	%	Description
<i>Valid</i>			
Business units* <i>amount of cash waqf</i>	27	100	The microfinance business unit is valid to be explained by 27 respondents
<i>Missing</i>			
Entrepreneurship* <i>Waqf</i>	0	0	There were no missing variables to cross-tab analysis

There is a valid processing summary for this study's objectives, which is 27 respondents, which is a requirement for the microfinance-*waqf* business unit ownership to be explained by the amount of cash-*waqf* collected (see Table 3). Table 4 provides information on cross tabulation between the microfinance-*waqf* business unit ownership and the amount of cash-*waqf* collected. Then, the results of the correlation test of two categorical variables through the chi-square test with the Asymp. Sig (2-sided) or *p*-value can be seen in Table 5 in which no correlation between those two variables.

TABLE 4. Cross tabulation

Cross-tabulation	N	%	Description
<i>Have no business units</i>			
Small cash <i>Waqf</i>	7	25.9	Among 27 microfinance- <i>waqf</i> , 7 microfinance that do not have business units belong to small <i>cash Waqf</i>
Medium cash <i>Waqf</i>	2	7.4	Among 27 microfinance- <i>waqf</i> , 2 microfinance that do not have business units belong to medium <i>cash Waqf</i>
Large cash <i>Waqf</i>	0	0	Among 27 microfinance- <i>waqf</i> , 0 microfinance that do not have business units belong to high <i>cash Waqf</i>
<i>Have business units</i>			
Small cash <i>Waqf</i>	12	44.4	Among 27 microfinance- <i>waqf</i> , 12 microfinance that have business units belong to small <i>cash waqf</i>
Medium cash <i>Waqf</i>	4	14.8	Among 27 microfinance- <i>waqf</i> , 4 microfinance that have business units belong to medium <i>cash waqf</i>
Large cash <i>Waqf</i>	2	7.4	Among 27 microfinance- <i>waqf</i> , 2 microfinance that have business units belong to high <i>cash waqf</i>
Total	27	100	

TABLE 5. The results of Chi-Square Test

Chi-Square Test	Value	Asymp. Sig. (2-side)	Description
Pearson Chi-Square	1.105 ^a	0.575	Non-valid with a significance level of 0,05*
Correlation coefficient	0,043		No correlation

*Ownership of business units has no relationship with the cash *waqf* collection.

DISCUSSION

Overall, the chi-square test results indicate that H_0 is accepted or microfinance-*waqf* institutions' ownership of business units has no relationship with the amount of cash *waqf* collected. Further analysis is focused on finding development programs that both attract the community and satisfy the donors (*waqifs*). In-depth interviews were conducted with the managers of microfinance-*waqf* institution Mandiri Sejahtera and microfinance-*waqf* institution Nahdlatul Ulama (NU) Sumenep because both microfinance-*waqfs* have active donors (*waqifs*) compared to the other 25. The results of the in-depth interviews were also collaborated by data compiled by the East Java Office of Cooperatives and SMEs (2019) which provided suggestions of ways to boost cash *waqf*, including: (1) establishing cooperation between the microfinance-*waqf* institutions with several non-profit Islamic organizations such as NU, Muhammadiyah and others; (2) maintaining public trust and empowering microfinance-*waqf* members better; and (3) running programs that can increase the intensity of *waqf* funds, such as low-cost financial assistance for market traders, farmers, and teachers, and conducting religious studies or gatherings.

Next, in-depth interviews on strategies to increase the intensity of cash *waqf* also recommended a good and transparent partnership between the three elements, namely managers (*nazhirs*), donors (*waqifs*) and recipients (*mauquf 'alaihs*). *Nazhirs* can involve *waqifs* and *mauquf 'alaihs* in preparing work plans. *Waqf* management

governance affects the sustainability of short-term and long-term work plans. The results of this study support research conducted by Kasri and Ramli [14], Shukor et al. [15], Noordin et al. [16], and Mohamed et al.[17] that recommended *waqf* organizations to be committed to studying the needs of the surrounding communities, such as educational facilities, religious facilities and other public facilities.

In winning *waqifs*' trust, empowerment activities for *mauquf 'alaihs* must also be increased. In addition, *nazhirs*' courtesy and honesty during donation campaigns and in reporting on the funds collected, and in managing and distributing the benefits can also intensify *waqf*. *Waqifs* on the two microfinance-*waqf* institutions appreciate endowment funds that provide employment opportunities and empower *mauquf 'alaih* groups of the young and the poor. The creation of new businesses as well as competition programs between new businesses can also be a strategy for job creation and poverty alleviation through endowment funds. This symbiosis also supported by the *hadith*, "*A man's work with his hand and every transaction which is free from cheating or deception*" (Ahmad, Al-Bazzar; Ath-Thabrani et.al from Ibn Umar, Rafi' bin Khudaij, Abu Burdah bin Niyar).

The two microfinance-*waqf* institutions also showed that the figure of the *kyais* (traditional Muslim clerics) as *waqf* ambassadors in developing cash *waqf* also increased the interest of the community to donate. The modesty of *kyais* among the community also has an influence on the willingness of members of the public to donate. Social solidarity and surrounding awareness embedded within the benefit distribution programs as well as the practice of self-endowment for *nazhirs*' performance can also increase the intensity of *waqf*. Entrepreneurial activities will benefit the productivity of cash *waqf* in microfinance-*waqf* institutions [18-20].

CONCLUSION

The main objective of the study was to examine the correlation between business unit ownership and the collection of endowment funds by microfinance-*waqf* institutions. The test results on the sample of 27 microfinance-*waqf* institutions in East Java shows that there is no correlation between the ownership of the business units and the amount of *waqf* funds collected. This is because donors in microfinance-*waqf* institutions are more motivated to donate if the institutions cooperate with non-profit organizations, such as NU, Muhammadiyah and other social non-profit organizations. The leadership of non-profit institutions has been proven so that it automatically increases the trust of the public, *waqifs* and *mauquf 'alaihs*.

At a more primary conclusion, *waqf* development programs that both attract the public and satisfy the donors are those that promote social solidarity and surrounding awareness. The Indonesian government, especially the Ministry of Cooperatives and SMEs, need to integrate regional and national programs, in the form of the Geographical Information System of cash *waqf* which contains reports on the collection, management and distribution of benefits in the cash *waqf* development. In addition, reporting on the success story of cash *waqf* productivity through videos, photo documentation and other digital media will be a good project. Two limitations of this study, namely the sample size and simple cross-tab analysis method, implies that further studies need to be conducted. Grounded research as a qualitative research design may seek the innovative project development in microfinance-*waqf* institutions.

ACKNOWLEDGMENTS

This paper was supported by funding (Ph.D scholar grant) provided by the Directorate of Research and Community Service, Deputy for strengthening Research and Development Ministry of Research and Technology/ Research Agency and National Innovation.

REFERENCES

- 1 Raissouni, A. *Islamic Waqf Endowment: Scope and implication*. (Rabat, Algiers, 2001)

- 2 Deguilhem, R., *The Waqf in the city. In the City in the Islamic World edited by Jayyusi, S. K. et al*, 2: 1494. (Leiden, Koninklijke Brill LV, The Netherlands, 2008)
- 3 Kuran, T., *The provision of public goods under Islamic law: Origins, contributions, and limitations of the Waqf system*, (University of Southern California: The Law School, Los Angeles, 2001)
- 4 Cajee, Z.A., Revitalising the institution of awqaf in developing the community, Paper presented at the Singapore international waqf conference, Singapore, March 2007, 4 pp 24-42
- 5 Sabit, M.T., *Maqaşid al-Shari'ah and Waqf: Their Effect on Waqf Law and Economy*. Intellectual Discourse. 1065-1091 (2018)
- 6 Sanep A. and Nur-Diyana M. *Institusi wakaf dan pembangunan ekonomi negara: Kespembangunan tanah wakaf di Malaysia*. Paper presented at the Persidangan Kebangsaan Ekonomi Malaysia ke VI (PERKEM VI), Ekonomi Berpendapatan Tinggi: Transformasi ke Arah Peningkatan Inovasi, Produktiviti dan Kualiti Hidup, Melaka, (2011)
- 7 Iman, Mar, A. H., Mohammad, M. T. S. H. *Humanomics*, 9(1), 5-14 (2017)
- 8 Muhammad A. H. *The Corporate Waqf: A Malaysian Experience in Building Sustainable Business Capability*. Paper delivered at Dubai International Conference on Endowments, Inter Continental Dubai Festival City, 17 February 2010
- 9 Fakhrol A. Z., Norhayate W. D., Zulhamri A. and Mohd-Rafi Y., *Global Journal of Commerce and Management Perspective* 3(5), 50-53 (2014)
- 10 Azliza A. M. Z., Rose R. A. S., and Zurina S. *Jurnal Pengurusan*, 38, 119 – 125 (2013)
- 11 Salarzehi, H., Armesh, H. And Nikbin, D., *International Journal of Business and Management* 5(7), 179-186 (2010)
- 12 Ajija, Shocrul R. A., Ahmad Hudaifah, Wasiaturrahma, Lusi Sulistyaningsih, Khaula Qurrata A'yun, Happy Karunia Mukti, Sri Cahyaning Umi Salama, Rofiqoh, Siti Nur Indah, Ummu Atika Azzizah. *Koperasi Baitul Maal wat-Tanwiil: Teori, Praktik dan Inovasi*, (CV. Inti Media, Yogyakarta, 2018) pp. 245
- 13 Dees, J., Gregory, J. E., and Peter.E., *Enterprising Nonprofits: A Toolkit for Social Entrepreneurs* (John Wiley & Sons, Inc., New York, 2001)
- 14 Kasri, Awaliah, R., Ramli, U. H. *International Journal of Islamic and Middle Eastern Finance and Management*, 10(2), 1753-8394 (2019)
- 15 Shukor S.A., Anwar I.F., Aziz S.A., Sabri H. *International Journal of Business and Society*, 10(2), 511-524 (2017)
- 16 Noordin N.H., Haron S.N., Kassim S., *International Journal of Social Economics*, 44(7), 921-936 (2017)
- 17 Mohamed Azmi A.S., Hanif N.R., Mahamood S.M, Exploring the social reality of waqf community using social media: The Netnography approach, (*IOP Conference Series: Earth and Environmental Science*, 2018) 117 pp. 012027
- 18 Sahiq A.N.M., Rahman N.H.A., Ismail S., Bakri M.H., Husin A., Ali R., *Advanced Science Letters*, 12, 4477-4480 (2016)
- 19 Brown, R.A. *Islam in modern Thailand: Faith, philanthropy and politics* (Routledge, New York, 2013) pp. 54-56, 69-74, 91-52, 123-128, 185-128.
- 20 Hasan H., Azmi N.F., Mud N.N.N., Ahmad I., *International Journal of Innovation, Creativity and Change* 6(9), 71-83 (2020)