

Bahaaeddin Alareeni  
Allam Hamdan *Editors*

# Sustainable Finance, Digitalization and the Role of Technology

Proceedings of The International  
Conference on Business and  
Technology (ICBT 2021)

# Lecture Notes in Networks and Systems

Volume 487

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Editors

# Sustainable Finance, Digitalization and the Role of Technology

Proceedings of The International Conference  
on Business and Technology (ICBT 2021)

 Springer

*Editors*

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# Foreword

I am delighted to write this foreword for The International Conference on Business and Technology (ICBT 2021) proceedings. I deeply believe in the role of such a conference and other similar scientific forums in bringing together leading academicians, scholars, and researchers to share their knowledge and new ideas as well as to discuss current developments in the fields of economics, business, and technology. ICBT 2021 provides a valuable window on the implementation of technologies such as artificial intelligence, IoT, and innovation in business development. For two days, a large number of distinguished researchers and guest speakers discussed many contemporary issues in business and technology around the world. It is a great privilege for the College of Business and Economics at Palestine Technical University-Kadoorie, Palestine, to co-publish this book for the sake of promoting excellent and cutting-edge research by scholars from around the globe. I have a strong faith that this book will be of great benefit for many parties, especially those aspiring to develop buoyant strategies that will lead to positive impact on any future endeavors. Finally, I hope that the ICBT'21 continues as a destination for researchers, postgraduate students, and industrial professionals.

Khalid Sweis

# Preface

The present business environment has been tumultuous due to the emerging new challenges resulting from innovative development and disruptive technology. Consumer demands for innovative products and services have urged business fraternity to be responsive and resilience in combating those new requirements.

The Fourth Industrial Revolution is characterized by the combination of physical and digital technologies, such as analytics, artificial intelligence, cognitive computing, machine learnings, and the Internet of Things (IoT). This would certainly impact the company's business direction, the future industries, the customers, the employees, and the society at large. The advancing technologies are bringing about social changes and economic development. As such, organizations are required to adapt to the new environment and strengthen their strategies despite the risk and uncertainty in the environment. New business integration strategies must be leveraged to ensure companies continue to sustain.

To anticipate the rapid change, education is set forth to be more innovative in offering the future ready curriculum. As such, education organizations and scholars are expected to be malleable and creative in designing new curriculum that embrace new technologies, integrating strong entrepreneurship values, fostering positive values and socio-emotional skills throughout the curriculum in order to produce quality and competent future human capitals that are ready to serve the future industries.

The integration between technology and business should be well managed so to provide a wide range of high-quality and competitive products and services in societies and countries. Therefore, the objective of this book proceedings is to conduct a review, examine, analysis, and discussion relating to the fields of business and technologies and their opportunities and challenges. We attempt to address a range of topics in the fields of technology, entrepreneurship, business administration, accounting, economics that can contribute to business development in countries, such as learning machines, artificial intelligence, big data, deep learning, game-based learning, management information system, accounting information system, knowledge management, entrepreneurship and social enterprise, corporate social responsibility and sustainability, business policy and strategic management,

international management and organizations, organizational behavior and HRM, operations management and logistics research, controversial issues in management and organizations, turnaround, corporate entrepreneurship, and innovation, legal issues, business ethics, and firm governance, managerial accounting and firm financial affairs, non-traditional research, and creative methodologies.

This book constitutes the refereed proceedings of the International Conference on Business and Technology (ICBT 2021) organized by EuroMid Academy of Business & Technology (EMABT), held in Istanbul, between 06 and 07 November 2021. The ICBT 2021 partners and supporters were: Universiti Malaysia Kelantan–Malaysia; National University of Life and Environmental Sciences of Ukraine–Ukraine; ARCIF Analytics; E-MAREFA–Jordan; Palestine Technical University–Kadoorie, Palestine; and the Palestinian Community Association For Ph.D. Holders in the Public Service, Palestine.

In response to the call for papers for ICBT 2021, 485 papers were submitted for presentation and inclusion in the proceedings of the conference. After a careful blind-refereeing process, 292 papers were selected for inclusion in the conference proceedings from 40 countries. Each of these chapters was evaluated through an editorial board, and each chapter was passed through a double-blind peer-review process.

These chapters are reflecting quality research contributing theoretical and practical implications, for those who wise to apply the technology within any business sector. It is our hope that the contribution of this book will be of the academic level which even decision-makers in the various economic and executive levels will get to appreciate.

Finally, we express our sincere thanks to the plenary speakers; Prof. Carolyn Strong, Editor in-Chief, Journal of Strategic Marketing from Cardiff University-UK; Prof. Khaled Hussainey, Co-Editor in-Chief, Journal of Financial Reporting and Accounting, from University of Portsmouth-UK; Prof. Timothy Mescon, Executive VP and Chief Officer-Europe, Middle East and Africa at AACSB International AACSB International–USA; Prof. Roselina Ahmad Saufi from Universiti Malaysia Kelantan–Malaysia; Prof. Munira Aminova, Experienced Higher Education management leader with a demonstrated history of working in the research industry, from United Business Institutes-Belgium; Prof. Mohammad Kabir Hassan, Editor in-Chief, International Journal of Islamic and Middle Eastern Finance and Management, University of New Orleans-USA; and Prof. Derar Eleyan, President Assistant of Palestine Technical University Kadoorie-Palestine.

Bahaeddin Alareeni  
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# Islamic Social Finance, Modern Slavery of Children, and Sustainable Development Goals in Indonesia



Sari Lestari Zainal Ridho and Dodik Siswanto

**Abstract** The purpose of this study is to build an optimization model of Islamic social finance and evaluate the existence of Islamic social finance and its effect on reducing modern slavery of children, using the Islamic social finance optimization framework approach in alleviating poverty and several sustainable development goals in Indonesia. The existence of modern slavery which has re-emerged is an important concern to study because slavery is anti-development. Moreover, Islam seeks to abolish slavery, so that modern slavery should no longer occur in Islamic countries, including Indonesia. This research is conducted using a quantitative descriptive method, with Partial Least Square Method and data from Indonesia in particular since Indonesia is a country with the largest Muslim population in the world. This research is important to be carried out since this subject has never been studied quantitatively. The findings of this study, which are based on the discussion of existing data indicate that quantitatively, in the short term there is no impact on the distribution of Islamic social finance funds, in the form of zakat, infaq, sadaqah on modern slavery of children in Indonesia. Thus, Indonesia, considering that the existence of modern slavery is anti-development as marked by its effect on welfare, as an Islamic country with the largest population in the world should pay more attention to the eradication of modern slavery of children.

**Keywords** Economic · Islamic finance · Labor

## 1 Introduction

The Black Lives Matter Movement, in the United States, brings back the dark history of Black lives and one of them is slavery, considering that Black Lives is inseparable

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from the history of slavery. In the long history of slavery, it is believed that some countries that practiced slavery at the beginning of human history were Islamic countries. Over time, the history of human civilization has changed, but the issue of slavery has now returned with a different face, more modern, that arises due to the gap between the rich and the poor, which allows exploitation with many people still trapped in poverty (Harding 2019).

Islam is indeed born in countries that undergo slavery, but Islam is a religion that seeks to eradicate slavery progressively, because slavery which was previously entrenched in these countries could not be abolished instantly along with the emergence of Islam. In Islam, slaves and the poor are two of the eight groups entitled to receive zakat. Based on Q.S. At-Taubah: 60, Zakah expenditures are intended only for the poor, the needy, those employed to collect [zakah], and for bringing hearts together [for Islam] and for freeing captives [or slaves], those who are in debt, the cause of Allah, and the [stranded] traveller—as an obligation [imposed] by Allah.

Zakat, infaq, sadaqah are the components/instrument of Islamic Social Financial (Beik 2019; Obaidullah and Shirazi 2017) which distribution is sought to optimally distribute welfare in the community and eliminate economic exploitation, under the Maqasid Sharia. Maqasid Sharia seeks to solve human welfare problems comprehensively, in line with sustainable development goals (Hardiana 2009). Hence, there are efforts to encourage the optimization of Islamic social finance (ZISWAF) for poverty alleviation and to achieve several Sustainable Development Goals (SDGs) (Bashori 2017). Thus it is expected that the ZISWAF will be able to create sustainable prosperity because welfare is believed to be more oriented to current conditions or in the short term, while sustainability is more oriented towards the future (Bakar et al. 2014).

The Islamic social financial optimization model that has been developed (Bashori 2017), aimed at achieving the 1st sustainable development agenda (end poverty), 2 (end hunger), 3 (good health), 4 (quality of education), 10 (reduced inequality). It is not yet directed at the goals of the 8th Sustainable Development Goals, decent work, with one of the targets is to end modern slavery (Johnston 2016), in addition to efforts to optimize Islamic social finance in poverty alleviation and the achievement of several Sustainable Development Goals that are in line with Maqasid Sharia. Given the existence of slavery is against the Maqasid Sharia and anti-development (McGrath and Watson 2017), it is important to add objective eighth in the framework of optimizing social financial finance in Indonesia, apart from the reasons previously stated, to end the expansion of modern slavery.

The emergence of slavery issue with a more modern face (Hernandez and Rudolph 2015; Such et al. 2020), became a trigger to examine whether the modern version of slavery, which arose due to poverty, was successfully eliminated in Islamic countries, such as Indonesia, through the distribution of zakat, infaq, sadaqah as the components of Islamic social finance, and the effect of such financing to development. Considering that the number of child laborers in Indonesia is currently quite large, with around 1 in 3 of the population being children aged 0–17 years (Windiarto, et al. 2019). Even though children are human capital for the future and Indonesia is a country with the largest Muslim population in the world, there are some doubts as well as pros and

cons on the influence of Islam on the economic and social performance of a country (Pryor 2007). In 2009, data disclosed by the Central Bureau of Statistics showed that there were 1.76 million child workers (Manpower Minister of Republik Indonesia 2014). The Indonesian government has made efforts to tackle child labor issues and stipulated laws that regulate the prohibition of employing children (Republik Indonesia 2003) comparable to the governments of other Muslim countries such as Ghana (Fuseini and Daniel 2019). However, nine years later, in 2018 based on Susenas data, there were still 1,709,712 child laborers in Indonesia (Zuraya 2020a).

Based on the above description, this study aims to develop an optimization model for Islamic Social Finance (Zakat, Infaq, Sadaqah) with the supreme goal to end modern slavery, through empirical analysis on the relationship between Islamic social finance and indicators of Zakat, Infaq, Sadaqah and the reduction/elimination of modern slavery. This research consists of five parts. The first part is an introduction, explaining the reasons for the importance of examining the issue of modern slavery in Islamic countries, followed by the second part that describing the theoretical basis of the study. The third part describes the methods used in the study, while the fourth part presents the calculation results of collected data, as well as the analysis, and lastly, the fifth part that comprising of the conclusions and recommendations.

## ***1.1 Objective***

Based on the background of this study, the purpose of this study is to develop an optimization model of Islamic Social Finance (Zakat, Infaq, Sadaqah) with the additional goal to end modern slavery and to analyze the impact of Islamic social finance (with indicators of Zakat, Infaq, Sadaqah) towards the reduction/elimination of modern slavery, poverty, hunger, and quality improvement of education quantitatively. The model was developed as a development framework to optimizing Islamic Social Finance in achieving several sustainable development goals, in accordance with the Maqasid Sharia in the Islamic country of Indonesia.

## **2 Theory**

### ***2.1 Modern Slavery***

Slavery is defined as the exploitation of laborers whose existence is recognized or regulated by institutions, regardless of how significant the structure is (Patterson 2001). Slavery as per this definition does not exist anymore in this world, but in practice slavery in a more modern form, modern slavery, is believed to still occur in various parts of the world, including Indonesia. The modern definition of slavery is quite diverse, often used interchangeably with other terms (McGrath and Watson

2017), as in forced labor. There are those who consider the two terms are the same (International Labor Organization, Walk Free Foundation 2017), but there are also those who consider them to be different (Zuraya 2020b).

In general, without distinguishing between modern slavery and forced labor, modern slavery is a form of forced labor that is carried out by individuals, groups, or private companies in all sectors (International Labor Organization, Walk Free Foundation 2017). It is also defined as all work made under threat of punishment so that the work is carried out without free willingness of the person doing the work. Based on this definition, forced labor contains three elements: first, there is the work that the worker must do for the employer; second, the work is carried out under threat; and third, the work performed against the workers' free will (International Labour Organization 2012).

## ***2.2 Child Labour and Modern Slavery of Children***

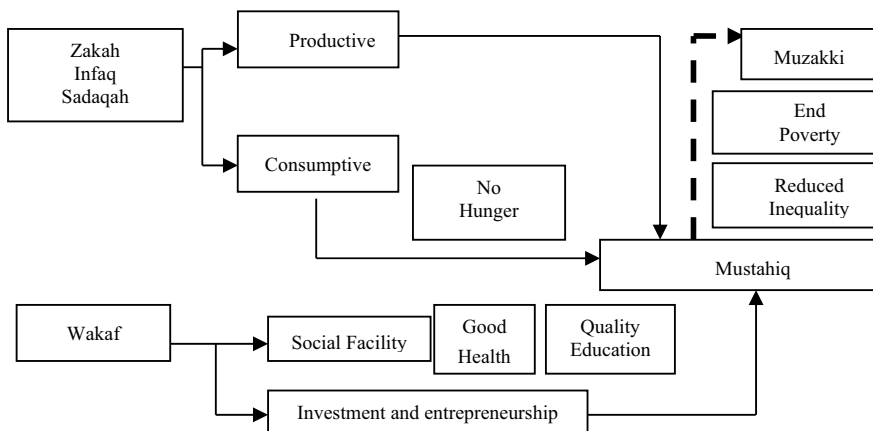
As mentioned previously, the definition of modern slavery, in general, is a form of work that is forced or made under duress, whereas in particular, modern slavery of children can be defined as children who are forced to work (Harding 2019). The Law of the Republic of Indonesia defines a child as any person under 18 (eighteen) years (Republik Indonesia 2014). Whilst, working children are children who do work to help their parents, train their responsibilities, discipline or skills that are carried out in the short term and after school time, with no element of exploitation in them, in contrary to the modern context of slavery in children. With regard to age restrictions, based on Law no. 20 of 1999, as to ratify the ILO Convention No. 138 concerning Minimum Age for Work, the government set the age of 15 years as the minimum age for work in Indonesia (International Labour Organization (ILO) 2018). According to these provisions, children under 15 years of age should not work or should not be forced to work. Children who are not supposed to work but still working are categorized as child labor.

The definition of child labor is every child who does work which nature and intensity may disturb and endanger the health and safety of the child as well as the child's optimal development physically, mentally, socially, and intellectually. Child labor in a broad concept includes those who work in all production markets and some types of non-market production (especially the production of self-used goods). This includes all forms of work in the formal and informal sectors, as well as jobs inside and outside the household (Minister and of Republik Indonesia 2022). Back in 1987, the term used for child labor is child forced to work (International Labour Organization (ILO) 2018), in line with the modern context of children slavery.

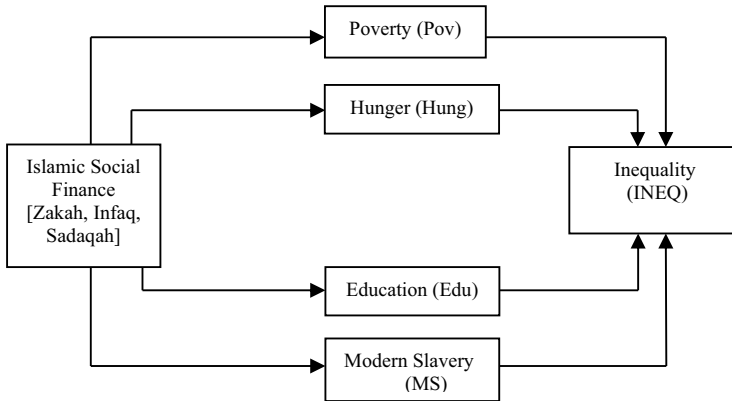
### 2.3 Islamic Social Finance and Efforts to Eliminate Slavery

Conventionally, social finance is a new financial market that is associated with the presence of a social economy that aims to provide solutions or to solve social problems efficiently (Andrikopoulos 2020). In particular, Islamic social finance is shariah compliant finance for social purposes and to improve the wealth distribution in society. Islamic social finance consists of several components/instruments or pillars (Beik 2019; Mohd Zain and Engku Ali 2117; Obaidullah and Shirazi 2017; Soyan Financial Consultancy 2017), including, (1) zakat, infaq, sadaqah (2) waqf, and (3) microenterprise. Zakat is an obligatory charity, compulsory for Muslims (Ahmad et al. 2015), while infaq and sadaqah are voluntary-based. As previously mentioned, numerous efforts have been made to optimize Sharia Social Finance (ZISWAF) in poverty alleviation and in achieving Sustainable Development Goals (SDGs), as depicted in Fig. 1 with several simplifications, which are adjusted to this research. Based on Fig. 1, the optimization of Islamic social finance is aimed at achieving the 1st sustainable development agenda (end poverty), 2 (end hunger), 3 (good health), 4 (complete education), and 10 (end inequality).

The distribution of zakat, infaq, and sadaqah for productive and consumptive activities is expected to reduce hunger, poverty, and inequality experienced by mustahiq. In the end, poverty reduction and reduced or end inequality are expected to reduce the number of mustahiq who then upgrade their status to muzakki. In this study, a research model was built with a simplification compared to the Social Finance Optimization as shown in Fig. 1, but there is an additional goal for the 8th SDGs, namely decent work, which seeks to eliminate modern slavery, to achieve sustainable development. This is in line with the purpose of Islamic social finance distribution



**Fig. 1** The framework of social finance optimization bashori 2017 Source adapted from *Kerangka Optimalisasi Keuangan Sosial Syariah (ZISWAF) dalam Pengentasan Kemiskinan dan Mencapai beberapa Sustainable Development Goals (SDGs)* (Bashori 2017)



**Fig. 2** Research conceptual framework: analysis development model of Islamic social finance (ZIS) impacts on the alleviation of inequality by accomplishing Sustainable Development Goals (SDGs); end poverty, end hunger, improve education quality, and end modern slavery

and QS. At-Taubah: 60, so that the conceptual framework or diagrammatic approach model in this study is as shown in Fig. 2.

### 3 Methodology

#### 3.1 Data

This section explains about the data used in this study and the reason underlying their usage, with respect to the requirements of the method(s) being used. The data used is of 2016–2017 time period, particularly collected from Indonesia, for the reason that Indonesia is a country with the largest Muslim population in the world and the way of life of its people is influenced by Islamic values. The data sources are the Central Bureau of Statistics as well as the Ministry of Women’s Empowerment and Child Protection (Ikawati 2017; Windiarto 2018; Windiarto et al. 2019), as depicted in Table 1.

Data on modern slavery was using data on child labor of 10–14 years, even though children are defined as all individuals below 18 years old, because based on the labor law of Indonesia, the minimum age of the workforce is 15 years and above. To measure inequality, we used per capita expenditure data. Based on the indicators used by the Indonesian Central Bureau of Statistics (<https://sirusa.bps.go.id/sirusa/index.php/indidik/197>), per capita expenditure is described as the cost incurred for the consumption of all household members for a month divided by the number of household members. Whereas the composition of household expenditure can be used as a measure to assess the level of the economic welfare of the population, changes in one’s income will have an effect on shifting patterns of expenditure. The higher

**Table 1** Source of data

| Variable                 | Indicator  | Description   | Source  |
|--------------------------|--|---|---|
| Islamic Social Financial | Distribution of Zakat Infaq Sadaqah (ZIS)          | Distribution of Zakah, Infaq, and Sadaqah by Province   | Indonesia Zakat Outlook (Center of Strategic Studies - The National Board of Zakat 2020)        |
| End poverty              | Poverty <b>Eradicate Extreme Poverty</b> (POV)     | Number of Poor Population by Province   | Statistic Indonesia   |
| End hunger               | Hunger <b>End all forms of malnutrition</b> (HUNG) | Prevalence of malnourished children under five by provinces in Indonesia (PSG), malnutrition under five (0–59 months) by Province | Statistic Indonesia   |
| Quality education        | Education <b>Complete primary education</b> (EDU)  | Primary School Gross Enrollment Rate, by Province   | Statistic Indonesia   |
| Decent work              | Modern Slavery <b>End modern slavery</b> (MS)      | Total Child Labour 10–14 years, by Province   | National Labor Force Survey, Survei Angkatan Kerja Nasional (Sakernas) 2016, BPS (Ikawati 2017) |
| Reduced inequality       | Inequality (INEQ)                                  | Average per capita expenditure per month in urban and rural areas by province and group of goods by Province                      | Statistic Indonesia   |

Source BPS, 2017, 2020; Baznaz, 2020 (Center of Strategic Studies - The National Board of Zakat 2020; Ikawati 2017)

the income, the higher the non-food expenditure, hence the expenditure model can be used as a tool to measure the level of welfare of the population. Thus, the changes in its composition are used as indicators of changes in welfare levels.

### 3.2 Model Development

This section consists of an explanation on the proposed model, its main references and modification. As previously explained, the purpose of this study, in general, is to analyze the correlation between Islamic social finance and modern slavery, and

several other variables based on the Sharia/Islamic social finance optimization framework (ZISWAF) approach in poverty alleviation and in achieving several Sustainable Development Goals (SDGs) (Bashori 2017). The model was developed with the addition of the 8th goal of the SDGs, decent work, which is relevant to the purpose of zakat distribution, namely ‘end slavery’, as the novelty in this study. The existence of Islamic social finance, in the form of Zakat, Infaq, Sadaqah, is expected to be able to eradicate poverty (Ammani et al. 2014), hunger, to improve the quality of education, and to end child labor, so that in the end it can reduce inequality (Ammani et al. 2014). Zakat is also used to develop human resources capacity, among others, through education (Arshad et al. 2015), which is then expected to reduce inequality (Hasan 2020), to end hunger, modern slavery, and poverty.

The regression model can be formulated mathematically as follows:

$$\text{INEQ} = \alpha_1 \text{EDU} + \alpha_2 \text{HUNG} + \alpha_3 \text{MS} + \alpha_4 \text{POV} + e_1 \quad (1)$$

$$\text{EDU} = \beta_1 \text{ZIS} + e_2 \quad (2)$$

$$\text{HUNG} = \gamma_1 \text{ZIS} + e_3 \quad (3)$$

$$\text{MS} = \delta_1 \text{ZIS} + e_4 \quad (4)$$

$$\text{POV} = \lambda_1 \text{ZIS} + e_4 \quad (5)$$

### 3.3 Method

This study was conducted using a quantitative approach with the PLS method. PLS is an alternative method of Structural Equation Modelling (SEM) which can be used to anticipate complex variable relationship problems at small data sample sizes (30 to 100). SEM is used to determine the complexity of the relationship between latent variables and other latent variables, as well as the relationship between latent variables and their indicators. Latent variables (constructs) are variables that cannot be measured directly, so they need indicators to measure them. SEM is formed by measurement equations using aspects of factor analysis and structural equations using aspects of multiple regression analysis.

SEM is called a measurement model, also known as the confirmatory factor analysis model. SEM in which all model variables are observed is called a structural model. The two types of models can be mixed. In a mixed model, if the measurement sub-model is relatively simple, it is common to combine the structural and measurement sub-model into one system and estimate all parameters simultaneously. For more complex latent constructs, however, it is also quite common to perform



exploratory factor analysis in the first stage, then use the factor scores obtained from the first stage as the observed variables in the structural model. Further, the term path analysis can be used synonymously with SEM, but generally connotes the use of graphic depiction from SEM to analyze the magnitude and significance of the direct, indirect, and total effects between variables (Mokhtarian and Ory 2009).

PLS-SEM, also referred to as variant-based SEM, was developed to offer a structural equation modeling approach with much greater flexibility (Hair et al. 2019). PLS is defined by two equations, namely the inner model and outer model. The inner model specifies the relationship between the latent construct and other latent constructs, while the outer model specifies the relationship between the latent construct and its indicators. The PLS model evaluation is divided into the following two evaluation steps: (1) Evaluate the outer model (measurement model), including the value of outer loading, average variance extracted (AVE), and composite reliability (CR). (2) Evaluate the inner model (structural model), including the value of path coefficients, and *R-square* ( $R^2$ ).

## 4 Results and Analysis

### 4.1 Overview Modern Slavery in Children in Indonesia

The Indonesian government has made efforts to eliminate child labour which is a modern form of slavery of children in Indonesia. These efforts have been started a long time ago, as early as in 1992, when the Government of Indonesia and the ILO signed a Memorandum of Understanding on the prevention and elimination of child labour (International Labour Organization (ILO) 2018). In 2020, the Ministry of Manpower of the Republic of Indonesia targeted the number of child workers reduced to 9,000 child workers. Since 2008 to date, child labour that has been withdrawn from the worst forms of child labour is as many as 134,456 child workers out of 1,709,712 children based on the 2018 National Socio-Economic Survey data. Based on the Public Relations Bureau of The Ministry of Manpower of the Republic of Indonesia, Friday, June 12, 2020, the commitment to eliminate child labour is marked by the ratification of the ILO Convention Number 138 regarding the minimum age allowed to work under Law Number 20 of 1999 (<https://kemnaker.go.id/news/detail/kemnaker-targetkan-Interested-9-ribu-perja-children-2020>).

According to the Minister of Manpower of the Republic of Indonesia, child workers tend to be in exploitative work situations and forced to work for quite a long period. This evidence was based on the 2012 National Labour Force Survey data which showed that most children work more than 40 h per week. Child labourers in Indonesia are at risk of having unsafe jobs because they are working more than the standard working hours of adults. Although there is no comprehensive data on child labour, children who work in the worst jobs have been found in types of work such as in drug trafficking, prostitution, deep-sea fishing, mining, and domestic work

(Minister and of Republik Indonesia 2022). Existing data collected by Child Labour Survey conducted by the ILO in 2009, shows that a total of 985,000 children aged 5–14 years, or about 44% of total child labour, are exposed to hazardous conditions, such as dust or vapour, hazardous objects, extreme cold or heat, chemicals, dangerous equipment, and hazardous heights. The highest exposure to risky conditions is those who work in agriculture and manufacturing where about 1 in 2 children in the sector are exposed to at least 1 hazardous condition (Minister and of Republik Indonesia 2022). Not only related to longer working hours, but the wages received are mostly also far from what it should be. Data from the Indonesian Central Bureau of Statistics mention that the average wage/salary in 2017 was IDR 2,742,621 (Central Statistics Agency 2020), while in the same year, the average wage/salary for working children was only IDR 1,106,374 (Windiarto 2018), significantly less than adults'. It is even possible for the children to be working on the job as unpaid workers (Badan Pusat Statistik 2009).

#### ***4.2 Partial Least Square Islamic Social Finance, Modern Slavery of Children and Sustainable Development Goals in Indonesia***

As previously mentioned, the PLS model evaluation is divided into 2 evaluations, namely the evaluation of the outer model and the evaluation of the inner model which will be analyzed in this section.

##### **1. Evaluation of the Outer Model (Measurement Model)**

Evaluation of the outer model aims to see the validity and reliability of a model. Evaluation of the outer model (measurement model) is including the value of outer loading, average variance extracted (AVE), and composite reliability (CR). The outer loading value is the coefficient of the measurement model that measures the validity of the PLS model construct. The outer loading value is said to be valid when outer loading is  $>0.5$ , based on the data processing result outer loading value in the PLS-SEM model is  $>0.5$  (1.000), all outer loading values are found to be valid.

##### **2. Evaluation of the Inner Model (Structural Model)**

In term of R-Square Coefficient of Determination, based on the output the R-square ( $R^2$ ) value obtained are:

1. The EDU model is 0.019 which means that the diversity of the EDU construct can be explained by the 1.9% ZIS construct.
2. The HUNG model is 0.030 which means that the diversity of the HUNG construct can be explained by the 3% ZIS construct.
3. MS model is 0.077 which means that the MS construct diversity can be explained by the 7.7% ZIS construct.

4. POV model of 0.162 means that the diversity of the POV construct can be explained by the 16.2% ZIS construct
5. The INEQ model is 0.275 which means that the diversity of INEQ constructs can be explained by the EDU, HUNG, MS, and POV constructs together at 27.5% and the remaining is explained by the error variable representing other variables not included in the model.

In order to check the significance of the SEM model with PLS, the bootstrapping process was then carried out. The purpose of this significance test is to determine the effect of exogenous variables on endogenous variables. Since the significance test (t-test) for Path Coefficients was not displayed, the Bootstrapping method was provided. In the bootstrapping process, 10,000 bootstrapping samples were used. Using this process, the correlation between the influence of exogenous and endogenous variables was obtained, as shown in Table 2 and Table 3. The results of the path hypothesis are depicted in Fig. 3.

*Hypothesis Testing (Path Coefficient)*

The path coefficient value is the path coefficient that measures the effect amongst the constructs. Hypothesis testing in PLS-SEM can be done using the t value, compared with the t table value. In this study, to test this t, the value of the path coefficients is significant if the p-value  $\leq \alpha$  with  $\alpha$  is 1%, 5%, or 10%. The output results in Table 2 show that: (1) there is a significant direct effect of the ZIS variable on POV (positive effect), meaning that if ZIS increases, the POV will increase; (2) there is a significant direct effect of the ZIS variable on HUNG (negative effect), meaning that if ZIS increases, HUNG will decrease, thus; (3) there is a direct and insignificant effect of the ZIS variable on EDU, meaning that if the ZIS increases/decreases, the EDU will not be affected; (4) there is a direct and insignificant effect of the ZIS variable on MS, meaning that if ZIS increases/decreases, MS will not be affected; and (5) there

**Table 2** Significance test results for direct effect (Significance test (path coefficients))

| Path coefficient | Original sample (O) | Sample mean (M) | Standard deviation (STDEV) | T statistics (O/STDEV) | P-values |
|------------------|---------------------|-----------------|----------------------------|------------------------|----------|
| EDU->INEQ        | -0.379              | -0.391          | 0.098                      | 3.861                  | 0.000*** |
| HUNG->INEQ       | -0.193              | -0.184          | 0.081                      | 2.385                  | 0.017**  |
| MS->INEQ         | -0.207              | -0.225          | 0.078                      | 2.650                  | 0.008*** |
| POV->INEQ        | -0.178              | -0.168          | 0.084                      | 2.130                  | 0.033**  |
| ZIS->EDU         | -0.138              | -0.145          | 0.091                      | 1.514                  | 0.130    |
| ZIS->HUNG        | -0.172              | -0.171          | 0.080                      | 2.152                  | 0.031**  |
| ZIS->MS          | 0.277               | 0.269           | 0.172                      | 1.616                  | 0.106    |
| ZIS->POV         | 0.402               | 0.395           | 0.145                      | 2.781                  | 0.005*** |

\*\*\*Significant for alpha ( $\alpha$ ) = 1%; \*\*Significant for alpha ( $\alpha$ ) = 5%; \*Significant for alpha ( $\alpha$ ) = 10%

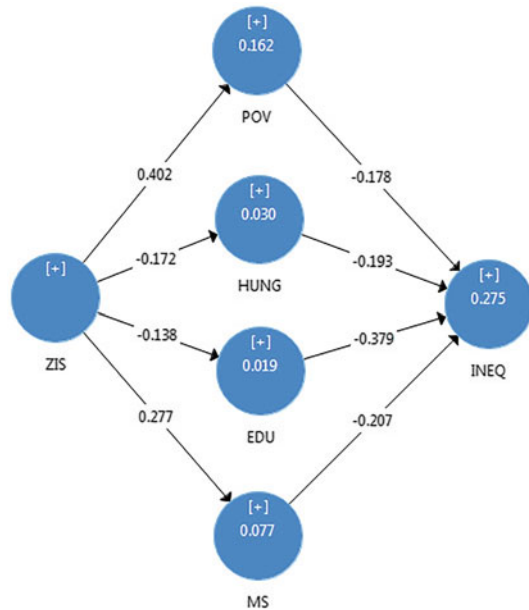
**Table 3** Significance test results for the indirect effect

| Total indirect effect    | Original sample (O) | Sample mean (M) | Standard deviation (STDEV) | T statistics ( O /STDEV) | P-values |
|--------------------------|---------------------|-----------------|----------------------------|--------------------------|----------|
| ZIS ->INEQ               | -0.044              | -0.027          | 0.071                      | 0.614                    | 0.539    |
| Specific indirect effect | Original sample (O) | Sample mean (M) | Standard deviation (STDEV) | T statistics ( O /STDEV) | P-values |
| ZIS->EDU->INEQ           | 0.052               | 0.061           | 0.048                      | 1.081                    | 0.280    |
| ZIS>HUNG>INEQ            | 0.033               | 0.034           | 0.024                      | 1.381                    | 0.167    |
| ZIS->MS->INEQ            | -0.057              | -0.059          | 0.045                      | 1.277                    | 0.202    |
| ZIS->POV->INEQ           | -0.072              | -0.062          | 0.037                      | 1.915                    | 0.056*   |

\*\*\*Significant for alpha ( $\alpha$ ) = 1%; \*\*Significant for alpha ( $\alpha$ ) = 5%; \*Significant for alpha ( $\alpha$ ) = 10%.

**Fig. 3** Bootstrapping results

Source Research data processed, 2021



is a significant direct effect of the EDU, HUNG, MS, and POV variables on INEQ (negative effect).

The output results in Table 3 shows that: (1) there is an indirect effect that is not significant for the ZIS variable on INEQ, meaning that if ZIS increases/decreases, INEQ will not be indirectly affected; (2) there is an indirect and insignificant effect

of the ZIS variable on INEQ through EDU, HUNG, and MS, meaning that if ZIS increases or decreases, INEQ will not be indirectly affected; and (3) there is a significant indirect effect of the ZIS variable on INEQ through POV (negative effect), meaning that if ZIS increases, INEQ will experience a decrease indirectly through POV; and vice versa, if ZIS decreases, INEQ will increase indirectly through POV.

### 4.3 Analysis

This section provides details about the critical discussion on the findings, an explanation of the novelty of the study, justifications of the results, and discussions on how do the results differ or equate to other related studies. The first finding shows that there is a significant direct negative effect of the education variable on the inequality variable, indicating that if the gross enrollment rate of primary schools increases, the average monthly expenditure will decrease; and vice versa if the gross enrollment rate of elementary schools decreases, the average monthly expenditure will increase. This happens because many workers in Indonesia do not attend school (around 3% in 2017, Central Statistics 2020) or do not complete primary school (about 13% in 2017, Statistic Indonesia 2020) when they entered the labor market. This situation has been going on for several years (Ridho et al. 2018). Not being involved in the world of education and entering the labour market, shape the increasing welfare or reducing inequality, this condition is quite unfortunate considering that education is a roadmap for sustainable development (Abu-Goukh et al. 2012).

This finding is contradictory to previous studies that highlighted the need for a proper education because education is associated with reduced or lower inequality (Hasan 2020) and contrary to previous research conducted in several other Islamic countries, it shows an insignificant effect between education and decreased inequality (Acar and Dogruel 2012). Our study also found that there is a direct and significant negative effect of the hunger variable on inequality. It means that there is a significant direct negative effect on the prevalence of malnourished toddlers on the average per capita monthly expenditure. If the prevalence of malnourished children under five decreases, the average per capita expenditure per month increases. The prevalence of malnourished children under five is a form of malnutrition that indicates insufficient food consumption (Mondeika 1970) which is opposite to the increase in average expenditure, indicating better welfare, or in other words, reduced inequality. Thus, it becomes essential for Islamic social financial institution to achieve its mission towards a healthy society (Zainon et al. 2014), especially for the less fortunate (Kassim-lakha and Bennett 2013).

Furthermore, there is a significant direct negative effect of the number of child labourers on the average expenditure per capita per month, meaning that if the number of child labourers decreases, the average expenditure per capita per month will increase, indicating an increase in welfare and a decrease in inequality. This finding is in line with the opinion arguing that the existence of slavery and development are two opposites (McGrath and Watson 2017). This is the reason for the

importance of eliminating modern slavery, especially among children, because in addition to children being the future human capital, the end of slavery is also important for the global development. As proven in previous studies, the effect of slavery on economic development becomes clearer over time. In agreement with that, the results of this study show that the widespread phenomenon of slavery is associated with lower progress of economic development (Bezemer et al. 2014).

Likewise, there is a significant direct negative effect of the number of poor people on the average expenditure per capita per month, indicating that if the number of underprivileged population decreases, the average per capita monthly expenditure or welfare will increase. This particular purpose of distributing Zakat, Infaq, Sadaqah with the existence of Islamic social finance is in line with Maqasid Sharia and sustainable development goals (Surah At Taubah: 60) (Syed Azman and Engku Ali 2019). The distribution of Zakat, Infaq, Sadaqah (ZIS) has a direct and insignificant effect on the gross enrolment rate of elementary schools, meaning that if the distribution of Zakat, Infaq, Sadaqah increases/decreases, the gross enrolment rate of elementary schools is not affected.

Another significant direct negative effect of the distribution of Zakat, Infaq, Sadaqah is found on hunger, in the form of the prevalence of malnourished children under five. If the distribution of Zakat, Infaq, Sadaqah improves, the prevalence of malnourished children under five will decline; and vice versa, if the distribution of Zakat, Infaq, Sadaqah decreases, the prevalence of malnourished children under five will increase. This shows empirically, the achievement of Islamic social finance objectives as it should be, as proposed in the optimization of its use (Bashori 2017).

On the other hand, a direct and insignificant effect of the distribution of Zakat, Infaq, Sadaqah is found on the number of child workers, meaning that any increase/decrease in the distribution of ZIS does not affect the number of child workers. However, the distribution of Zakat, Infaq, Sadaqah is found to have a direct and significant positive effect on the number of poor people. When the distribution of ZIS improves, the number of poor people will increase; and vice versa, if the distribution of Zakat, Infaq, Sadaqah decreases, then the number of poor people will decrease. This is contrary to the belief that the solution to improving the socio-economic situation of the community and overcoming poverty is to build or strengthen the sustainability of Islamic financial institutions in society (Sulayman 2015). This phenomenon occurs due to the 'poverty mentality' in many communities. Whenever a program or activity is organized as poverty assistance programs in Indonesia, for example during the distribution of infaq and sadaqah, people often suddenly acted as if they are 'poor'. This mentality causes an increase in the number of poor people.

This study also found a significant indirect negative effect of the Zakat, Infaq, Sadaqah variables on inequality through poverty, meaning that if ZIS distribution increases, then inequality will decrease indirectly (indicating by the number of poor people); and vice versa, when the amount of ZIS distribution decreases, inequality will increase indirectly through poverty. This finding is in consistent with previous research examining the relationship between finance and inequality (Hasan 2020), which stated that financial redistribution has an effect on reducing inequality. These

findings indicate the importance of achieving the goal of zakat to improve the equilibrium of welfare in society through optimal wealth redistribution.

And lastly, we found no direct effect of the distribution of zakat, infaq, sadaqah on the attainment of basic education and the reduction of modern children slavery in Indonesia, even though education and child labor has an effect on or is important for reducing inequality. This finding is contradictory to the opinion presented by previous research, that mentioned social finance allocation should be aimed at developing human resources (Arshad et al. 2015).

## 5 Conclusion

This section consists of an explanation on the findings against the research questions. As stated earlier, the purpose of this study is to generally analyze the effect of Islamic Social Finance (ZIS) in alleviating inequality through the realization of several Sustainable Development Goals (SDGs). Based on the results and discussion in this study, it can be concluded that in the short term there is a significant direct negative effect of the distribution of zakah, infaq, sadaqah on hunger; meaning that if the distribution of ZIS increases, hunger will decrease; and vice versa, if the distribution of ZIS decreases, then hunger will increase. In addition, there is a significant direct positive effect of ZIS on poverty, which shows when the distribution of ZIS increases, then poverty will increase; and vice versa. This phenomenon happens due to the poverty mentality of some communities in Indonesia. There is also a significant indirect negative effect of ZIS distribution on welfare through poverty, showing that if Zakah, Infaq, Sadaqah increases, then welfare will experience an indirect decrease through poverty; and vice versa, if the distribution of Zakah, Infaq, Sadaqah decreases, then welfare which is inversely proportional to inequality will increase indirectly through poverty. This finding is related to the previous phenomenon that found an increase in the number of 'poor people' as a result of the assistance program for the poor from Islamic social finance.

However, there is no direct influence or impact on Islamic social finance in the form—zakat distribution, infaq, sadaqah—on the attainment of basic education and the reduction in the number of modern slavery of children in Indonesia, even though education and the existence of child labor are affecting and crucial for eliminating inequality. Indonesia as a country with the largest Muslim population in the world—although it is still debatable whether the Muslim residents are true believers or just being Moslem by culture—is in fact, still struggling with the issue of child workers, children who experience modern slavery and have not been positively affected by the existence of Islamic Social Finance.

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# CERTIFICATE OF APPRECIATION

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**Sari Lestari Zainal Ridho, Dodik Siswantoro**

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