

Shaping the future of shariah compliance *ar-rahn* through price estimator machine

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Abstract

Ar-rahn activity is a way to get cash. One of its processes is estimating the *marhūn* price. However, the price estimation in current application is based on the market price or the listed-official prices. Many researches have criticized this way as it leads to estimation mistake due to human error. Based on the invention of price estimator machine, this research aims to shape the future of Sharia compliance *rahn* that employ artificial technology to minimize human error. This study is normative and experimental discussion. It analyzed qualitatively through various data collected from primary (the experimented-price estimator) and secondary (journals, patents, research reports, legal texts) sources. Based on the experiment of the price estimator, the estimation of pawned-object could be done accurately. Thus, this machine could be involved in *ar-rahn* activity to ease the *ar-rahn* mechanism. This study could be very useful in financing industry such as Islamic Pawnshop or Conventional Pawnshop. Especially in this context is its usage in Indonesia.

Keywords

Shariah, Ar-Rahn, Estimator

Introduction

Pawning or mortgaging are, indeed, being one of the oldest financing instrument that has been practiced by human throughout history [1], [2]. This instrument is called as an accessory contract that follows the primary agreement related to the debt. Pegues stated that accessory contract is subjected to the *accessorius sequitur principale* (an accessory follows or depends upon the principal [3], [4]. In Islamic Law, this kind of contract named as *ar-rahn* that stands to secure the primary contract [5].

Practically, *ar-rahn* has been practiced a lot by small and medium enterprisers (SME). It is because of its easy financial approach rather than bank in which the SME has limited access to it [6], [7]. In its process, *ar-rahn* builds two sides relationship between *rāhin* (customer) and *murtahin* (pawnshop) in which customer submit the goods for the debt given by pawnshop. The goods acts as financing security for *murtahin* that could be used to resolve the unsettle debt [8], [9], [10], [11]. Within this relationship is one particular

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mechanism that occurred where pawnshop needs to calculate the goods value for determining how much the debt could be lent to the customer [12].

Traditionally, the price estimating process is done by an estimator expert who calculates the goods value through several price data like market price [13]. However, regrettably, the appraisal process on pawned-goods nowadays have involved human error in its valuation. Several researches have reported this problem as it leads to substantial financial disparities between customer. At least there are two prominent related-studies which discussed on manual data entry in estimation process [14] and cognitive biases [15] that sometimes hinder the price estimation.

This human error, viewed from Islamic Law, could reverse the Shariah compliance within *ar-rahn* application. It related to the linearity of just principle in Islam and *ar-rahn* application through the valuation process of pawned-goods. It has been a long-lasting principle that the contract has to provide both sides benefit, thus it must be done fairly. Islamic schools have discussed the pawned-price evaluation in two reputable Madhabs, both are *Hanafiyah* [16] and *Malikiyah* [17].

Lurking beyond the development of technology, the estimation of pawned-value in pawnshop is meeting the need of this fast advance. Especially when information technology and the employment of Artificial Intelligence (AI) is being one of the pawnbroking excellent service [18]. However, the involvement of technology or AI is limited to online application. It is ranging from simple mode of employment to advance database driven through AI. The variations of the involvement are like web-based price estimation [14], business valuation through AI [19] and its prospect in property valuation [20] or real estate appraisal [21], and the usage of multi-modal deep model with iterative co-attention [22]. On the other hand, there is no further discussion yet on the AI application into the price estimator machine.

Thus, based on numerous dialogs of valuation process on pawned-goods, this article tried to elaborate how the usage of AI and information technology could minimize the error in traditional estimation process of pawned-price. Accordingly, how it would shape the near future for utilizing the price estimator device in every pawnshop and shaping its Shariah compliance in *ar-rahn* application.

Method

This article is normative one. It used qualitative method to analyze the secondary data generated from various sources such as journals, books, and patent description. Conceptual approach has been involved in this study to determine the coherent of Shariah Compliance within *ar-rahn* in using price estimator device.

Results and Discussion

Along with many studies that have discussed on utilization of technology in pawned-goods appraisal, there is one invention relates to this application. This invention has

added the important of AI in *ar-rahn* or pawning activity. The founders have named this invention as Price Estimator Machine. By using this device, the pawnshop could minimize the human error in valuation process. The estimator person who charged for this duty could simply turn on the estimator machine, put the goods in the provided-pad, click the price estimation button, and the installed-camera will scans and takes the image for further comparation throughout the price data bank to generate the exact value of the goods (See Figure 1) [23].

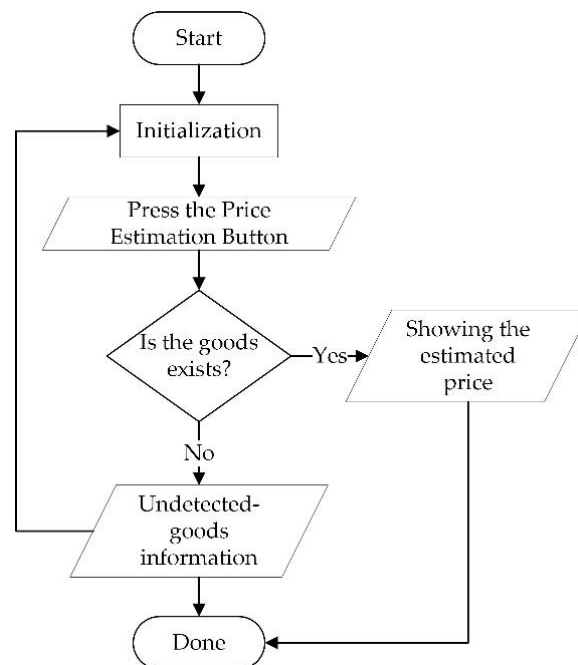


Figure 1. The Price Estimation Process Using Image Processing

Without manual data entry done by human, this device has high possibility to minimize or even deprive the human error. Additionally, there is no opportunity for the cognitive biases sourced from the men behind the desk. The application of this estimator device tends to simplify the job of human estimator for there is no need to manually inputting the data to search the market price. The process could be less tired, ease the valuation, and providing fast service for the pawnshop customers.

Outlooking this simplicity from Shariah perspective, it could be assumed that the principle of just and fairness in *ar-rahn* contract is strengthened by using this device for better service. The estimator device with data prices driven by AI is linier to what classical Islamic Schools said in their law books. This price estimator machine could apply as market price data and it in line with what *Al-Marghinani* said that the pawned-goods have to be valued within the market price [16]. Additionally, the urge to employ the estimator expert (human expert) [17] is likely helped by involving this device.

However, this device is still having shortcomings to be solved in its future development. The estimator machine has limitation for its ability to scan only the daily goods that used by people such as bags, shoes, wallets, watches, clothes, etc. These daily goods are actually chosen from the majority of people where they usually pawn their daily belongings [24], [25]. Nonetheless, it has no capability yet to evaluate the big volume

goods such as cars, motorcycles, bicycles, or any kind of electronic devices such as mobile phones, laptops, and computers. Based on the experiment done by the inventors, this machine is successfully estimating the goods price as simple as it is.

Despite on its drawbacks, it could be further developed in the future by always enriching and updating the database. Through this device, the *ar-rahn* application could be shaped as an adaptation of technology and in the future, it could be one of the chosen factors of people to take the financial need from Shariah compliance pawnshop. Moreover, the potential of *ar-rahn* beside its Shariah values will enhance more than the classical one. Thus, this device in particular and other similar inventions out there would be valuable for shaping the future of Shariah compliance *ar-rahn*.

Conclusion

The fast development of technology is something that we should not ignore. The existence of AI could shape the positive future of Islamic contract, especially in *ar-rahn* application. Even though the Price Estimator Machine is produced as remarkable patented-prototype, it would bring more benefits if it applies practically in the pawnshops. The features of this machine are no doubt in line with Shariah perspective for its just and fairness delivered to both sides of *ar-rahn* contract. Thus, this article, beside its expression of this device ability, suggests the future research of its implementation in real pawnshops. The generated-data from its field application could enrich the estimator machine development in the future.

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