CALCULATIONS AND DISTRIBUTION OF SHARES IN THE ISLAMIC SYSTEM OF INHERITANCE: A BEGINNER APPROACH

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Abstrak

Artikel ini mencoba menyajikan rumus yang ramah pelajar untuk perhitungan dan pembagian ahli waris. Tujuannya adalah untuk mengenalkan guru, siswa, hakim dan pengacara yang sedang berkembang, serta praktisi hukum lainnya dengan formula yang lebih mudah dan lebih sederhana untuk meredakan ketakutan dan kesulitan yang sebagian besar diidentifikasi oleh formula lain. Metode penelitian yang digunakan dalam artikel ini bersifat deskriptif, dengan pendekatan utama berdasarkan analisis dokumen atau konteks. Penulis mendasarkan studinya pada sumber primer yang relevan dengan ilmu Mirath (sistem warisan Islam), baik dalam bentuk cetak, elektronik, maupun online. Penelitian ini untuk mempermudah proses perhitungan dan penyaluran warisan dalam sistem warisan Islam melalui pendekatan yang lebih ramah pembelajar. Pendekatan baru yang diusulkan menunjukkan bahwa dengan menguasai prinsip-prinsip dasar seperti derackionalisasi dan manajemen denominasi fraksional, distribusi warisan dapat menjadi lebih sederhana dan lebih akurat. Temuan ini tidak hanya membantu guru dan siswa ilmu-ilmu agama Islam, tetapi juga praktisi hukum syariah untuk menghindari kesalahan dan memperkuat keadilan sosial sesuai prinsip-prinsip Islam.

Kata kunci: Warisan, Islam, Distribusi, Pendekatan, Perhitungan, Pemula.

Abstract

This paper attempts to present a learner friendly formula for calculation and distribution of heirs. The aim is to acquaint teachers, students, emerging judges and lawyers, as well as, other legal practitioners with an easier and simpler formular inorder to allay fears and difficulties with which other formulae are mostly identified. The research method used in this article is descriptive, with the main approach based on document or context analysis. The author bases his study on primary sources relevant to the science of Mirath (Islamic inheritance system), both in print, electronic, and online forms.This research is to simplify the process of calculating and distributing inheritance in the Islamic inheritance system through a more learner-friendly approach. The proposed new approach shows that by mastering basic principles such as derackionalization and fractional denomination management, inheritance distribution can become simpler and more accurate. These findings not only help teachers and students of Islamic religious sciences, but also practitioners of sharia law to avoid mistakes and strengthen social justice according to Islamic principles.

Keywords: Inheritance, Islam, Distribution, Approach, Calculation, Beginner.

INTRODUCTION

Being acquainted with the different categories of heirs and the respective share of each, when and where some heirs inherit and some do not, those who are affected by both deprival and transferal exclusions, as well as other theoretical aspects of the Islamic system of inheritance is not as difficult as calculating and computing of the various shares of heirs (Razimi, 2016). The modus operandi used by many scholars appears to be above the level of contemporary students and legal practitioners. There is therefore the need for a simpler and beginner approach (Cheema, 2021).

The science of the inheritance system in Islam, otherwise known as "Mirath," has an important role in regulating the distribution of inheritance among the rightful heirs. However, the complexity of calculating and distributing inheritance parts is often a challenge, especially for beginners, students, teachers of Islamic religious sciences, and practitioners of sharia law (Hoque, 2022). The main problem found was the complex formulas and calculation methods, which were often beyond the comprehension of many people. As explained by Al-Tasawwuli (1998), this science requires a deep understanding of the various categories of heirs, inheritance situations, and applicable laws. Without a simpler approach, the correct and sharia distribution of inheritance is difficult to achieve (Hoque, 2022).

Previous research has underlined the importance of studying the Islamic inheritance system as part of religious science, even said to be "half of the science" by the Prophet Muhammad SAW, as recorded in Sunan Ibn Majah. Several studies, such as those conducted by Yahya (2004, 2018), have shown that mastery of this knowledge is not only essential for individuals who are involved in sharia law, but also important for maintaining justice in Muslim society. However, most of the research still focuses on traditional approaches that are considered difficult for laypeople to follow.

The urgency of this discussion lies in the need to provide a simpler and easier to understand method, especially for beginners. The new approach in this paper aims to simplify the inheritance calculation process with a more learner-friendly formula (Zouaoui, 2021). In addition, this topic is interesting because it not only offers practical solutions to the problems at hand, but also supports the achievement of social justice as mandated in Islam (Zainuddin, 2023). Thus, this research is expected to be a practical guide for various groups, ranging from students to sharia judges, in carrying out their duties in accordance with the principles of Islamic law (Tarmizi, 2020).

This paper attempts to present a learner friendly formula for calculation and distribution of heirs. The aim is to acquaint teachers, students, emerging judges and lawyers, as well as, other legal practitioners with an easier and simpler formular inorder to allay fears and difficulties with which other formulae are

mostly identified. The paper begins with a general overview of the Islamic system of inheritance, followed by a presentation, illustration and explanation of the new formula of calculation.

METHOD

The research method used in this article is descriptive, with the main approach based on document or context analysis. The author bases his study on primary sources relevant to the science of Mirath (Islamic inheritance system), both in print, electronic, and online forms. The literature used includes published monographs and unpublished manuscripts, as well as references from scholars who are competent in this field. This approach allows for an in-depth exploration of the basic principles, as well as the inheritance distribution formula described in Islamic law.

Research Design

The research design is descriptive, aiming to provide an in-depth explanation of the Islamic heritage system, from theory to practical application. This design was chosen because the focus of the research is to describe the steps and principles involved in the inheritance distribution process.

Data Source

Data were obtained from two main sources, namely primary and secondary sources. Primary sources consist of books, legal documents, and classical and modern literature that discuss the science of heritage in Islam, including the text of the Qur'an, hadith, and the opinions of scholars. Meanwhile, secondary sources consist of scientific articles, guidebooks, and monographs that are relevant to the topic of heritage distribution, both in print and digital form.

Data Collection Techniques

The data collection techniques in this study include three main approaches. First, literature analysis is carried out by examining the main texts on heritage science (Mirath), both normative ones such as Islamic law and practical guidelines to understand its basic principles. Second, consultation with experts involves informal interviews with Islamic scholars and practitioners to ensure the validity of the interpretation and relevance of the methods used. Third, the author also relies on personal experience gained from the teaching process and hands-on practice in distributing heritage as part of learning, thus enriching practical insights in this research.

Data Analysis Procedure

The data analysis procedure in this study is carried out through several structured stages. The first stage is the identification of the main theme, namely determining the category of inheritors, the share of heirs, and special conditions that can affect the distribution of inheritance. The second stage involves simplifying the calculation process by developing easy-to-follow steps, including

the use of derackonization methods and the application of simple fractional values to make it easier to understand. The final stage is application and testing, where hypothetical cases are used to test the proposed method in order to ensure its validity and freedom from errors.

Validation of Findings

The validation of the findings in this study is carried out through two main steps. First, the findings are compared to traditional methods that have been described in classical books to ensure their conformity with established approaches. Second, a re-consultation with experts is carried out to ensure that the proposed method remains in line with sharia principles, so that it can be applied practically and in accordance with Islamic law.

RESULTS AND DISCUSSION

A general overview of the Islamic system of inheritance (*Mirath*)

The literal meaning of the term *Mirath*, henceforward referred to as inheritance, is the property left by the deceased person, otherwise known as the estate. Technically, however, Mirath refers to the branch of Islamic jurisprudence which deals with the devolution of dead person's estate among his/her eligible and qualified heirs as well as a science which leads to the knowledge of the share of each heir from the property of the deceased person (Al-Tasawwuli: 1998, 648). It is a science of the practical rulings of Shari'ah relating to the devolution of wealth after its owner has actually died or is presumed dead by a court of law.

The Prophet, *Ṣallallahu 'alaihi wa sallam*, refers to the science of Mirath as 'half of knowledge'. He stressed the need for the Muslim community to acquire it as it would be the first branch of knowledge which would be taken away from them (Ibn Majah II: 908, No. 2719). He pointed out that a time would come when two people would quarrel over a case of inheritance and could not find somebody who could judge rightly between them (Tabarani VI: 36-37, No. 5720). This means that absence of this science in the Muslim community is a sign of the Hour, which the Prophet, *Ṣallallahu 'alaihi wa sallam*, said will only come in the time of the perverse (Muslim VIII: 288, No. 7590). The implication of this therefore is that so long as Muslims acquire this science they will continue to be moved far away from the Hour and if they ignore it the Hour will be drawn closer. The Prophet, *Ṣallallahu 'alaihi wa sallam*, is also reported to have said that whoever distributes inheritance correctly Allah will reserve for him his own share in al-Jannah (Baihaqi VI: 224, No. 7965).

Distinguishing features of *Mirath*

The following are some of the features of Islamic system of inheritance which make it different from other systems of succession. (1) Inheritance is for those qualified and eligible heirs who are related to the dead person by consanguinity, affinity or clientage. In other word, only those who are blood

relatives of the dead person or are marriage partners (Husband or wife) will inherit. (2) Wills and bequests are only for those who are not eligible heirs. Qualified and eligible heirs are not beneficiaries of wills. (3) Deciding who is to inherit and who is not to lies with Allah alone. A person therefore has no right to make another person his heir by means of a written will, for example, or to exclude an eligible heir from inheritance. (4) Male and female, young and old, weak and strong, a just delivered baby and even a child in the womb have equal rights to inheritance. (5) Females inherit different shares at different capacities. For instance, they may get half the share of males, equal, double or even triple, depending on the situations and circumstances. They inherit as wives, mothers, sisters, daughters, grand daughters, grandmothers, etc. Some of them may even exclude males from inheriting. (6) Males may get twice the share of females, equal share with that of females or even a share which is less than that of females. (7) Exclusion from inheritance may affect females as well as males, depending on cases and situations. (8) Human beings are not among inheritable items (Yahya: 2004).

Essentials of inheritance

In Islam inheritance is built on three pillars and if any of them is missing, distribution becomes illegal in the Sight of Allah. These pillars are as follows: (1) The deceased person: the person who died and is to be inherited. (2) The heir: the person who is eligible to inherit. (3) The estate: the item, thing or property which is to be inherited (Al-Baghdadi: 2000)

Conditions of inheritance

Distribution of inheritance in Islam is correct and legal if it satisfies the following conditions. They are as follows: (1) Death of the person to be inherited; (2) Survival of the heir; (3) Adequate knowledge of the science of inheritance and the procedure of distribution on the part of the distributor; (4) Adequate knowledge of the legal and eligible heirs of the deceased person and the estate he left behind (Al-Mufshi: 1998).

Grounds of inheritance

They are as follows: sound marriage; blood relationship; clientage; the *baitul mal.*

Impediments to inheritance

They are as follows: (1) Stillborn – This is a child who is delivered dead. If a child is delivered and does not cry, sneeze, or move, it will not be counted among heirs. Inability to determine who dies first. This is where relatives are found dead and it becomes impossible to determine who among them died first. (2) Mutual imprecation: This is called *Li'an*. It is a situation where a husband denies the pregnancy of his wife and each swore on his stand before a court of law. If this occurs and the wife delivers, the child will not inherit the father and the father will not inherit the child. However, the child and the mother will inherit one another.

(3) Difference of religion. (4) Slavery. (5) Adultery/Fornication. (6) Homicide (Al-gharnati: 1994, 606)

Procedure of distribution and calculation of shares The specified inheritable fractions

The first step to a proper and successful distribution and calculation in any given inheritance case is converting the status and share of each heir to memory in different situations. Without this, distribution may be replete with several errors and inconsistencies. As explained before, the fractional shares which are specified in the Qur'an and *Sunnah* are six. These are as follows (Binlis: 2000): (1/2) One-half or one out of two portions; (1/4) One-fourth or one out of four portions; (1/8) One-eighth or one out of eight portions; (2/3) Two-thirds or two out of three portions; (1/3) One-third or one out of three portions; (1/6) One-sixth or one out of six portions.

Heirs and their acronyms

It is important to note that in order to ease things when dealing with distribution of inheritance, the name of each heir is to be represented by the initials of his or her name. In this book the following are the given initials of all the heirs: Son (S); Son's son (SS); Daughter (D); Son's daughter (SD); Wife (W); Husband (H); Full sister (FS); Consanguine sister (CS); Uterine brother (UB); Uterine sister (US); Uterine children (UCH); Mother (M); Mother's mother (MM); Father's mother (FM); Father (F); Father's father (FF); Full brother (FB); Consanguine brother (CB); Full brother's son (FBS); Consanguine brother's son (CBS); Full uncle (FU); Consanguine uncle (CU); Full uncle's son (FUS); Consanguine uncle's son (CUS); Slave master (SM); Slave mistress (SMST).

Suggested steps for calculation and distribution

For a proper computation and distribution of any given case of inheritance, the following steps should be followed: Determining all the eligible heirs; Determining those who will inherit and those who are excluded; Identifying the fractional share of each heir; Finding the 'origin of the problem; Determining the share of each heir from the origin; Determining the monetary share of each heir from the estate; Arriving at the correct distribution (Yahya: 2018).

The following is an explanation of each of these steps:

Determining all the eligible heirs.

It is always important to know the entire heirs left by the deceased person. Those who are related to the deceased person through consanguinity and those who are related to him through affinity or clientage should first be identified. The deceased's descendants (children and grand children), ascendants (parents and grand parents) and collaterals (brothers and sisters) should be identified among those heirs who are related to him through consanguinity. Wife or wives and husband of the deceased should be identified among those who are related to him/her through affinity (marriage). It should also be determined if the deceased

person was formerly a slave who was set free by his master or mistress and if the former master or mistress is alive or not. All these should be established and ascertained.

Determining those who will inherit and those who are excluded.

Being related to the deceased person in any way does not necessarily mean that one should inherit. This is why among all the heirs that survive the deceased person, those who will inherit and those who are excluded from inheriting should be identified. This is because an heir may be eligible to inherit, but in the presence of another heir, he will not. For example, a father's father is eligible to inherit, but due to the presence of a father he will not. Similarly, an eligible heir may lose his eligibility to inherit as a result of finding himself in an impeding circumstance. For example, a son is eligible to inherit, but if he is found to have murdered his father he will not be counted among those who will inherit the deceased father. Therefore, identifying those who will inherit and those who are excluded among the heirs is always important for any distribution of inheritance to be in conformity with the provisions of Shari'ah.

For the sake of clarity, an example can be given of a person who died and was survived by the following heirs: Father; Father's father; Full brother; Son; Son's daughter; Wife; Mother. In this case, the father, the son, the wife and the mother are the only heirs who will inherit. Father's father will not inherit because the father is present. The father's father is therefore excluded by the presence of the father. The full brother will not inherit because of the presence of the father and the son. Each of these two excludes the full brother from inheriting. The son's daughter will not inherit because of the presence of the son. She is therefore excluded from inheriting by the son.

Consequently, when arranging the heirs 'Ex' should be written under the father's father, full brother and son's daughter, meaning 'Excluded'. The arrangement should look like this:

F	FF	FB	M	S	SD	W
	Ex	Ex			Ex	

It is important to write down all heirs in any given case, including those who are excluded. The names of those heirs who are excluded will only disappear in the next arrangement after 'Ex' (i.e. excluded) is indicated under their names in the first one. Thereafter, their names should no longer appear in the computation process.

Identifying the fractional share of each heir.

The names of all heirs in any given case should be arranged by their initials as shown in the above table. The fraction of each heir should be determined and written under his or her initials. The impact of the presence of each heir on the fractional share of other heirs should be examined. This is because an heir may inherit a particular fractional share due to the absence of another heir and may

inherit a different fractional share if another heir is present. For instance, the fractional share of the husband is (1/2) if there are no children or son's children. However, if there are children or son's children, the husband's fractional share changes to (1/4) instead of (1/2). All these should be properly examined and identified.

A person, for example, dies and is survived by the following people: Mother; Father; Husband; Daughter; Son's son; Consanguine sister. The arrangement of the heirs along with their respective shares or status should be arranged as follows:

M	F	H	D	SS	CS
1/6	1/6	1/4	1/2	R	Ex

According to this arrangement, the mother and the father get a fractional share of (1/6) each because of the presence of daughter and son's son. Similarly, due to the presence of son's son and daughter, husband inherits a fractional share of (1/4). Daughter gets (1/2) because there is no son and the daughter is only one. Consanguine sister is excluded by the presence of father and 'Ex', meaning excluded, is therefore written under her name. Son's son, being the only agnatic heir, whose agnatic power is greater than that of father, will inherit the remainder if there is any.

Finding the 'origin of the problem' (*aslul mas'alah*).

An important step in the distribution and computation process is finding a large whole number out of which each heir in any given case would be allotted his or her respective share. However, the share of each heir should now be in a defractionalised form. In other words, the fractional share of each heir should now be represented by his calculated portion out of that large whole. For instance, the share of (1/3) out of (12) should now be (4), that of (1/6) should now be (2) and so on. This large whole number is known as the *Aslul mas'alah* (origin of the problem).

The following are some suggested steps for determining the 'origin of the problem', henceforth to be referred to as 'origin' only:

Step 1

The entire six specified fractions are classified into A and B, as follows:

A	B
1/2	1/3
1/4	2/3
1/8	1/6

Step 2

After this classification the general guidelines should be taken into consideration: If a given case of inheritance contains a single fractional share of class [A] only, the denominator of that fraction should be taken as the origin. If, for example, a woman dies and is survived by her husband only, his fractional share is (1/2) because there are no children and son's children.

H
1/2

The fraction (1/2) is in the [A] class. In any fraction the figure on top is called 'numerator' while that below is called 'denominator'. In the fraction (1/2) therefore, 1 is the figure on top and it is therefore the numerator while 2 is the figure below and so it is the denominator. Going by this guideline therefore, the denominator of the husband's fractional share, which is (2), is to serve as the origin out of which the husband will be given his defractionalised share. Similarly, if a given case contains a fractional share of (1/4) only, the origin should be (4) and if the fractional share is (1/8) only, the origin should be (8).

If a given case of inheritance contains a single fractional share of class [B] only, the denominator of that fraction should be taken as the origin. For example, if a person died and is survived by two daughters only, their fractional share is (2/3) because there is no son who would have converted them into agnates.

2D
2/3

In this case therefore (3), which is the denominator of the fraction (2/3), should serve as the origin. Similarly, if a given case contains a fractional share of (1/6) only, the origin should be (6) and if the fractional share is (1/3) only, the origin should be (3).

If a given case of inheritance contains two or more fractional shares of class [A] only, the largest denominator among the fractions should be taken as the origin. A woman, for example, died and is survived by a husband and a daughter.

H	D
1/4	1/2

The daughter will get (1/2) because there is no other daughter inheriting with her and there is no son to convert her into an agnate. The husband will get (1/4) because there is a daughter. All the fractions in this case i.e., (1/2) and (1/4) are of class [A]. There are two denominators which are (2) and (4). Since the largest of these denominators is (4) the origin should therefore be (4). The case is also the same if a case contains (1/2) and (1/8). Since (8) is the largest denominator, it should be taken as the origin.

If a case contains two or more fractional shares of class [B] only, the largest denominator of the fractions should be taken as the origin. A person, for example, dies and is survived by a uterine brother and mother.

UB	M
1/6	1/3

The mother will inherit (1/3) because there are no children, no son's children, no up to two brothers or sisters and the case is not that of *Gharrawah* (the deceiver case, in which the mother's share would have been reduced to 1/3 of the remainder, instead of 1/3 of the entire estate. This will be explained later under special cases). The uterine brother will get (1/6) because there is no other uterine brother or uterine sister inheriting with him and there is no father, father's father, children or son's children who would have excluded him. Both fractions in this case i.e., (1/3) and (1/6) are of class [B]. Since (6) is the largest denominator among the fractions, it should serve as the origin.

If a case contains a fractional share of class [A] and one or more fractional shares of class [B], the denominator of class [A] fractional share is to be multiplied by (3) and the answer should be taken as the origin. A person, for instance, dies and is survived by a son's daughter and mother. The son's daughter will inherit (1/2) because there is no son to exclude her, no daughter, no other son's daughter of her level and no son's son of her level to convert her into an agnate.

SD	M
1/2	1/6

Mother will get (1/6) because of the presence of a son's daughter. In this case, while (2) is the denominator of class [A] fraction, (6) is that of class [B] fraction. If the denominator of class [A] fraction, which is (2), is multiplied by (3) the answer will be (6). The origin therefore should be (6).

Another example is that of a person who died and is survived by a wife, a uterine sister and a mother.

W	US	M
1/4	1/6	1/3

The wife will inherit (1/4) because there are no children or son's children. The uterine sister gets (1/6) because there is no father or father's father or children or son's children to exclude her and there is no uterine brother or another uterine sister inheriting with her. Mother inherits (1/3) due to the absence of children, son's children and up to two brothers or sisters. It is clear in these fractions that one i.e. (1/4) is that of class [A] while the other two i.e. (1/4) and (1/3) are of class [B]. The denominator of class [A] fraction is (4) and if it is multiplied by three the answer is (12) which will now serve as the origin.

If a given case of inheritance contains two or more fractional shares of class [A] and one or more fractional shares of class [B] the largest denominator among the class [A] fractions is to be multiplied by three and the answer is to serve as the origin. A person, for example, died and is survived by a daughter, a husband and a mother.

D	H	M
1/2	1/4	1/6

The daughter will inherit (1/2) because there is no son to convert her into an agnate and there is no another daughter. The husband will inherit (1/4) because of the presence of a daughter. The mother will get (1/6) because of the presence of a daughter. It will be seen here that there are three fractions involved i.e. (1/2), (1/4) and (1/6). Out of these (1/2) and (1/4) belong to class [A] while (1/6) belongs to class [B]. The denominator (4) of class [A] is larger than the denominator (2), therefore should be multiplied by (3) giving (12). The origin in this case is therefore (12). In another example, a person died and is survived by a full sister, two uterine brothers, mother and wife.

FS	2UB	M	W
1/2	1/3	1/6	1/4

The full sister will inherit (1/2) because there is no son, son's son or father each of whom would have excluded her. Similarly, there is no daughter or son's daughter or another full sister and there is no full brother who would have converted her into an agnate. The two uterine brothers will get (1/3) because they are more than one and there is no son, son's son, daughter, son's daughter, father or father's father each of whom would have excluded them. The mother will inherit (1/6) because there are more than one brothers and sisters. The wife will get (1/4) because there are no children or son's children. In this case there are two fractions of the [A] class (1/2 and 1/4) and two fractions of the [B] class (1/6 and 1/3). Of the two denominators of class [A] fractions (4 and 2) the largest one is (4). It should therefore be multiplied by three, the answer of which is the origin.

Determining the share of each heir from the origin

One of the most important things in calculating shares in any given case of inheritance is finding the origin of the problem. It is from the origin that the share of each heir can be calculated. A person's share from the origin will henceforth no longer be in the fractional form, such as (1/2), (1/3), etc. Share of each heir will now be in another form. At this stage the origin represents the estate to be distributed as inheritance. To determine the de-fractionalized share of each heir the origin is divided by the denominator of his fractional share. The result is then multiplied by the numerator of that fraction. The answer is the share of that heir from the origin. In other words, if there is a fractional share of (1/2) and the origin is, for example, (8) the numerator of this fraction is (1) while the denominator is (2). What is to be determined is how many times will that denominator (2) go into the origin (8) without a remainder. How many (2)s are there in (8)? Since the number of (2)s that can be found in (8) is (4) this result, which is (4), should be

multiplied by the numerator of this fraction which is (1) and the answer (4) is the share of that heir out of the origin (8).

To give an example, a person dies and is survived by a mother, a wife and a daughter.

M	D	W
1/6	1/2	1/8

The mother will get (1/6) because of the presence of a daughter. The wife will get (1/8) due to the presence of a daughter. The daughter will inherit (1/2) because there is no son to covert her into an agnate and there is no other daughter. Since there are more than one class [A] fractions (1/2 and 1/8) and a class [B] fraction (1/6) the largest denominator of class [A] fractions (8) should be multiplied by three in order to find the origin for this case, which will be (24). To determine the de-fractionalized share of the mother the origin (24) is divided by the denominator of her fractional share (6). The answer, which is (4), is then multiplied by the numerator of her fractional share (4x1). The answer (4) is her share from the origin. The daughter's share is (12) because if the origin (24) is divided by the denominator of her fractional share, (2), and the answer (12) is multiplied by the numerator of her fraction (12x1) the answer is (12). The wife's share is (3), going by the same formula.

M	D	W
1/6	1/2	1/8
4	12	3

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When arranging the heirs and their respective shares for calculation, a space is left between the fractional shares and the origin. It is in this space that the share of each heir from the origin will be written directly under him or her. It is at this stage that all fractions are left and henceforth all shares are to be presented in their post-origin forms. For instance, in this case, the daughter's share will henceforth be (12), not (1/2). The wife's and mother's shares will now be (3) and (4) respectively.

It is important here to know that cases of inheritance are generally three. These are as follows: (1) Normal: This is when the sum total of the de-fractionalized shares of all heirs in a given case is either equal with the origin or is less than equal but there is an agnatic heir who would get the remainder. In this case the origin is divided by the denominator of an heir's fraction and the answer is multiplied by the numerator of that fraction in order to determine his or her de-fractionalized share. (2) *Awl*: This is when the sum total of the de-fractionalized shares of all heirs in a given case is more than the origin. In this case that sum total, which is now called *'awl*, is divided by the denominator of an heir's fraction and the answer is multiplied by the numerator of that fraction in order to determine his or her de-fractionalized share. This case will be fully dealt with in another

volume. (3) *Radd*:This is when the sum total of the de-fractionalized shares of all heirs in a given case is less than the origin and there is no agnatic heir of any type. In this case that sum total, which is now called *Radd*, is divided by the denominator of an heir's fraction and the answer is multiplied by the numerator of that fraction in order to determine his or her de-fractionalized share. This case will also be fully discussed in another volume.

Determining the monetary share of each heir from the estate

It is important at this juncture to know that distribution and calculation of inheritance in Islam are done in liquid money. As for those items which are not liquid money, experts in the area are contacted who determine their monetary value. A house, for example, may need a number of experts before its monetary value is determined. Quantity surveyor, specialist in determining value based on location, expert in determining value based on the residential area, a professional in determining the value of each part of a residence, etc., may be involved before the final value of a house is determined.

Now that the share of each heir is calculated from the origin, the real distribution in money will now come next. In order to this easily, a formula which will guide the reader through this is needed. In order to calculate the share of each heir from the estate, his share from the origin is divided by the origin and the result is multiplied by the estate.

The guiding formula is therefore:

Share ÷ Origin × Estate (If the case is normal) Or *Share ÷ Correction × Estate* (If the case is *Awl*) Or *Share ÷ Correction × Estate* (If the case is *Radd*)

For example, the estate is Ten Thousand Naira (N10, 000), the heirs are a daughter, a mother, a husband and a son's son. Their respective shares from the origin, which is (12), are as follows:

D	M	H	SS
1/2	1/6	1/4	R
6	2	3	1

12

To calculate the share of the daughter from the estate, going by the above formula, her share from the origin (6) should be divided by the origin. This means that the (6) button on the calculator should be pressed first, then the division sign and then (12). After that the multiplication sign should be pressed and then the estate (10,000). The same process should be followed in calculating the shares of the mother and the husband.

The calculation will be as follows:

D   6/12   x 10,000 =   N5000

M	$\frac{2/1}{2}$	x 10,000	=	N1666.66666666666 7
H	$\frac{3/1}{2}$	x 10,000	=	N2500
SS	$\frac{1/1}{2}$	x 10,000	=	N833.33333333

The shares of the daughter, the mother, the husband and the son's son from the origin are each divided by the origin and multiplied by the estate, as a result of which the daughter gets N5000, the mother gets N1666.666666666667, the husband gets N2500 and the son's son gets N833.33333333.

In another example, the heirs are two daughters, a wife, a mother and a son's son and the estate is Eighty Thousand Naira (N80, 000). In this case the fractional share of two daughters is (2/3) because they are more than one and there is no son to convert them into agnates. Moreover, the son's son cannot convert them into agnates. The wife will inherit a fractional share of (1/8) because there are daughters. The mother's fractional share is (1/6) due to the presence of daughters. The son's son will inherit the remainder because there is no son and he cannot convert daughters into agnates.

The fractional shares in this case are (2/3), (1/6) and (1/8). Going by the guidelines of finding the origin, the denominator of the class [A] fraction (8) is multiplied by three. The answer (24) should be taken as the origin:

2D	M	W	SS
2/3	1/6	1/8	R
16	4	3	1
	24		

The share of the two daughters from the origin is (16), the share of the mother is (4) and that of the wife is (3). The son's son should inherit the remainder if there is any. To determine whether there is a remainder or not, the shares of the two daughters, the mother and the wife are added together. The sum total is then subtracted from the origin. The answer is the remainder and it should be indicated directly under the agnate's name i.e., the son's son:

$$16 + 4 + 3 + = 23 \quad \text{Then } 24 - 23 = 1$$

What comes next is calculation of the share of each heir from the estate. Here all heirs must have their respective shares calculated. One should not merely calculate shares of two daughters, mother and wife only and determine the share of the agnatic heir i.e. the son's son, by just adding up all the shares and subtracting the sum from the estate, as was done with regard to the origin. Error may occur which can lead to wrong distribution. The following arrangement is suggested:

2D	16/24	x 80,000 =	N 53333.33333333333
M	4/24	x 80,000 =	N 13333.33333333333
W	3/24	x 80,000 =	N 10000
SS	1/24	x 80,000 =	N 3333.333333333333

The shares of the two daughters, the mother, the wife and the son's son from the origin are each divided by the origin and multiplied by the estate, as a result of which two daughters get N53333.33333333333, the mother gets N13333.33333333333, the wife gets N10000 and the son's son gets N3333.333333333333.

Arriving at the correct distribution

Calculating the monetary share of each heir does not necessarily mean that distribution is correct. In the normal case of inheritance, and not *Awl* or *Radd*, it is only when the sum total of all the monetary shares equals the estate that arrival at a correct distribution can be realized. However, it is important at this stage to take note of the following important information.

In mathematics there is what is called 'rounding to two decimal places'. Decimal is represented by a dot (.). Rounding to two decimal places occur when there are more than two figures after decimal, e.g. (2.3456) or (6.34728) can be rounded up to (2.34) and (6.34) respectively. In any case, where rounding to two decimal places is required there must be two things. These are: (1) The rounding digit i.e., the digit in the second decimal place. For example, in (4.3456), the rounding digit is (4) because, after decimal, it is the second digit. The first digit after decimal is (3) and the second one is (4). It is the digit which is to either be increased or left as it is. (2) The deciding digit i.e. the digit which comes immediately after the rounding digit. For example, in (4.3456), the deciding digit is (5) because it is the digit which comes immediately after the rounding digit, which is (4). It is called the deciding digit because it is the digit which decides on whether the rounding digit is to be increased or left as it is. (3) Whenever the rounding digit is increased the action is called 'rounding up'. (4) When the rounding digit is left as it is the action is called 'rounding down'.

The following are the guidelines to be followed whenever rounding to two decimal places should occur: (A) If the deciding digit is less than (5) the rounding digit remains as it is. This is called rounding down. For example, if (2.6345) is to be rounded to two decimal places, the action will be that of rounding down. This is because the deciding digit (4) is less than five and therefore the rounding digit (3) should be left as it is. The rounding will therefore be (2.63). (2) If the deciding digit is up to (5) or higher the rounding digit is increased by (B). This is called rounding up. For example, if (2.6352) is to be rounded to two decimal places, the action will be that of rounding up. This is because the deciding digit (5) is up to five and therefore the rounding digit (3) should be increased to (4). The rounding will therefore be (2.64). (C) In a situation where the rounding digit is (9) and the

deciding digit is up to five or higher, the rounding digit turns to (0) and (1) is added to the digit before it. For example, if (2.3967) is to be rounded to two significant figures, the deciding digit (6), because it is up to five and higher, will make the rounding digit (9) to be written as (0) while (1) will be added to the digit before it (3). The rounding will therefore be (2.40). (D) If the rounding digit is (9) and the digit before it is also (9) while the deciding digit is up to five or higher, both the rounding digit and the digit before it turn to (0) each and (1) is added to the digit before decimal. For example, if (3.99721) is to be rounded to two significant figures, the deciding digit (9) and the digit before it (9) will each be written as (0) and (1) is increased to the digit before decimal (3). The rounding will therefore be (4.00). (onemathematicalcat.org)

To ensure the correctness of calculation, all the monetary shares are added together. The following distribution can be used as an example:

2D	16/24	x 80,000 =	N 53333.33333333333
M	4/24	x 80,000 =	N 13333.33333333333
W	3/24	x 80,000 =	N 10000
SS	1/24	x 80,000 =	N 3333.333333333333

The wife's monetary share is (N10, 000) and there is no need for rounding to two decimal places. The monetary share of the two daughters is:

(N 53333.33333333333).

There is need here for rounding to two decimal places. The deciding digit, which is the third digit after decimal point, is (3) and it is less than five. Since this is the case, only the deciding digit (3) and the digit before it (3) should be retained. The monetary share of the two daughters should therefore be written as (N53333.33), that of the mother as (N13333.33) and that of the son's son as (N3333.33). These shares should be added together in order to see if the total sum will be exactly or approximately equal to the estate, which is (N80, 000 or N7999.99). This will look like this:

10000 + 53333.33 + 13333.33 + 3333.33 = N79999.99

Approximately therefore, the answer is N80, 000

CONCLUSIONS AND SUGGESTIONS

This research has succeeded in achieving its main goal, which is to simplify the process of calculating and distributing inheritance in the Islamic inheritance system through a more learner-friendly approach. The proposed new approach shows that by mastering basic principles such as derackionalization and fractional denomination management, inheritance distribution can become simpler and more accurate. These findings not only help teachers and students of Islamic religious sciences, but also practitioners of sharia law to avoid mistakes and strengthen social justice according to Islamic principles.

For further research, it is recommended that empirical testing of this approach be carried out on more complex inheritance cases. In addition, the

development of tools such as technology-based software that supports this approach-based legacy calculation can be an innovative step to make it easier to use among the wider community. Collaborative efforts with scholars and legal experts are also important to ensure that the implementation of this approach remains in line with sharia rules.

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