Isnad Models in the System of Transmission of Hadith and Their Evaluation According to the Probability of Narrations Theory

"Hadis Rivâyet Sisteminde İsnad Modelleri ve Rivâyetlerin Olasılığı Kuramı Kapsamında Değerlendirilmesi"

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Özet: Hadis iliminde, bir rivâyetin atfedildiği kaynağa aidiyetini belirlemede râvilerin güvenilirliği kadar isnadın niteliği de önemli bir yer işgal etmektedir. Bazı isnad türleri rivayetin kaynağa ait olma ihtimalini tayin etmede o denli baskındırlar ki, râvilerin güvenilirliği faktörünü geri plânda bırakabilirler. Bu zaviyeden bakıldığında, rivâyetlerin olasılığı kuramı bakımından isnad modellerinin katagorik bir yaklaşımla ele alınması ve netice üzerindeki potansiyel etkinliğinin araştırılması elzem görünmekteydi. Bu makale, bu çerçevede teorik bir incelemeyi gerçekleştirmeyi ve muhtemel sonuçlarını tartışmayı amaçlamktadır.

Atıf: Halis Aydemir, "Isnad Models in the System of Transmission of Hadith and Their Evaluation According to the Probability of Narrations Theory", *Hadis Tetkikleri Dergisi (HTD),* , VII/1, 2009, ss. 29-54.

Anahtar Kelimeler: Rivayet, isnad modelleri, hadis, ihtimal hesapları, matematiksel analiz.

INTRODUCTION

Isnad can be defined as a chain of transmission formed by the particular inquiry about "*from whom did you hear this particular hadith*", which has been passed down from one transmitter to another or from one generation to the other. This inquiry may be considered as natural and the transmission may be deemed to be authentic for primary narrations where the transmission is accepted to come from a primary source and where the number of narrators in an isnad is less in numbers whereas on the other hand it is clear that this inquiry is likely to remain inadequate for continuous series of transmissions that has been coming from secondary or tertiary sources of the accounts of the life and sayings of Muhammad (p.b.u.h.) and his companions. Consequently, the isnads which have an important place in the field of the hadith literature

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and the chains of transmissions that have maintained their existence for centuries can be explained by the importance attached to the source to which they are attributed.

Each hadith has a sanad specific to it which documents the route by which the narrative has been transmitted as well as an isnad[1] which is formed by multiple chains of transmitters rather than a single to that hadith. Isnads of ahadith may appear as a rich bundle consisting of a wide range of chains of transmitters and routes by which the narrative has been transmitted as well as a limited transmission chain consisting only one or two routes. The difference between various isnads in terms of their transmission chains and routes and how these differences affect probabilities of ahadith to be authentic and genuine form the basis of this paper.

The number of the persons who actually witnessed or heard about the event and those who narrated from them in succession comes to the forefront as a decisive factor in terms of the nature and authenticity of the isnad. This is because an isnad is the result of the collective activity of the relevant narrators in the course of history where they acted in solidarity to support the accuracy and completeness of their narrations.[2] As the number of the narrators who gave support to this collective solidarity in a chain of transmission the meaning that the relevant isnad wants to create and to convey on the audience becomes so much stronger. Consequently there is a close correlation between the types of isnads and the functionality of isnads. As a matter of fact, some isnads seem likely to be quite weak in terms of the messages that they are trying to convey on the audience. When it is looked from this point of view, it can be easily perceived that the nature and quality of the isnad comes to the forefront rather than its existence in terms of the reliability of a message. For this reason, in this paper we examined the close correlation between the types of isnads and the meanings they express within the scope of the probability of narrations theory.

[1] In this paper the term *sanad* is used to define the route by which the narrative specific to a hadith has been transmitted. On the other hand, the term *isnad* means the network consisting of any and all chains of transmission of that hadith.

[2] Isnad generally functions like this. This approach is always essential in all isnad chains which are designed (drawn) in relation ahadith. However, in this paper we want to emphasize a particular point: the elements constituting an isnad may mutually support each other whereas from time to time they may be in conflict with each other, and of course this is one of the basic functions of the isnad. However, in this paper in which we focused on the categorization of isnads, we hypothesized that all narrators are in solidarity with each other, in other words they mutually support each other as an interdependent and indivisible system in order to make it easily understandable.

Muhaddiths who profoundly know and narrate ahadith had also examined the nature and quality of the isnad as they had focused attention on the reliability of the narrators who form the chain of transmission and the continuous and uninterrupted characteristics of the relevant chains of transmissions whilst they examined the routes by which the narrative had been transmitted. As a matter of fact, muhaddiths categorized a message which has come by way of passing down from one generation to the next as a munkar (denounced/rejected), a gharib (strange/rare) or a shadhah (irregular) message with regard to the nature and quality of its chain of transmission especially where it is narrated from one chain only or in cases where the narrator is the only person to narrate it and supported by no one else.[3] On the other hand, a thorough investigation of any and all routes by which a narrative has been transmitted and compilation of all narrations and accordingly revealing of the isnad as an unbroken and uninterrupted chain of transmission have become a requisite to determine whether to consider the relevant message as an authoritative and reliable message which is called mütewatir based on a strong chain of narration due to the strong and undeniable level of numbers of narrators.

It is not very difficult to estimate that it had been more difficult for hadith scholars to determine and analyze the types of isnads as we further went and looked back in the course of history in chronological order. Forwhy, first and foremost it is necessary to compile all relevant narrations together in order to compile the isnad network. This had become easier only after when the compilations and classifications of hadith came into existence and became widespread. At the present day information technology has reached a high level of excellence that makes it appropriate for broader use and capacities of information technologies have made various possibilities available for researchers to incorporate within research structures in a manner that has never been previously possible. Consequently, one can say that contemporary muhaddiths are more fortunate ever than in determining the types of isnads and analyzing their effectiveness.

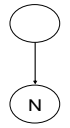
In this paper, before moving to isnad models we will first focus on the types of narrations which are the basic elements that form an isnad.

[3] Although isnad has not been mentioned explicitly in the hadith science to appear among the minimum requirements in establishing the soundness (sihhat) of a hadith, it is understood that muhaddiths had always attached importance to this factor and had frequently referred to the same. See, Ibn Al-Salah, Al-Mokaddimah, Maktabah Al-Farabi, 1984, p. 44-48.

I. Types of Narrations

A. Single Narration

It means a narration which is originated from only one source and narrated by only one narrator.



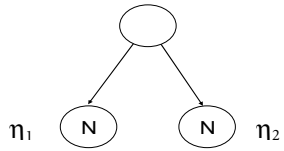
η **N**: Narrator

In such a type of narration the probability that it belongs to the source to which it is attributed is equivalent to the reliability coefficient of the relevant narrator.[4]

$$\omega = \eta$$

B. Double Narration

It means a narration which is originated from one single source and narrated by two narrators.[5]



In such a type of a narration the probability that it belongs to the source to which it is attributed is calculated based on the reliability coefficients of each of two narrators:

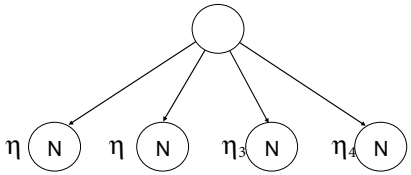
$$\omega = \frac{\left[\frac{1/(1-\eta_1) + 1/(1-\eta_2)}{2}\right]^2 - 1}{\left[\frac{1/(1-\eta_1) + 1/(1-\eta_2)}{2}\right]^2}$$

[4] See, for the theoretical basis of the formula presented in this article, Halis AYDEMİR, "A Theoretical Approach to the System of Transmission of *Hadith* Based on Probability Calculations", *Hadis Tetkikleri Dergisi (HTD)*, III/1, 2005, pp. 51–84.

[5] It is not necessarily such narrations to be transmitted concurrently and collectively. Moreover, transmission of these narrations at discrete times is more preferable. Forwhy, such a matter is important in terms of its major contribution to the insulation factor (see the mentioned article, page 67). As a matter of fact majority of the transmissions in hadith literature were made at discrete times.

C. Multiple Narrations.

It means narrations which are originated from one single source but conveyed by more than two narrators.



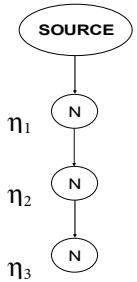
In such a type of a narration the probability that it belongs to the source to which it is attributed is calculated based on the reliability coefficients of each of four narrators:

$$\omega = \frac{\left[\frac{1/(1-\eta_1) + 1/(1-\eta_2) + 1/(1-\eta_3) + 1/(1-\eta_4)}{4}\right]^4 - 1}{\left[\frac{1/(1-\eta_1) + 1/(1-\eta_2) + 1/(1-\eta_3) + 1/(1-\eta_4)}{4}\right]^4}$$

II. Types of Isnad

A. Single Isnad

It means a chain of transmission which consists of single narrations.



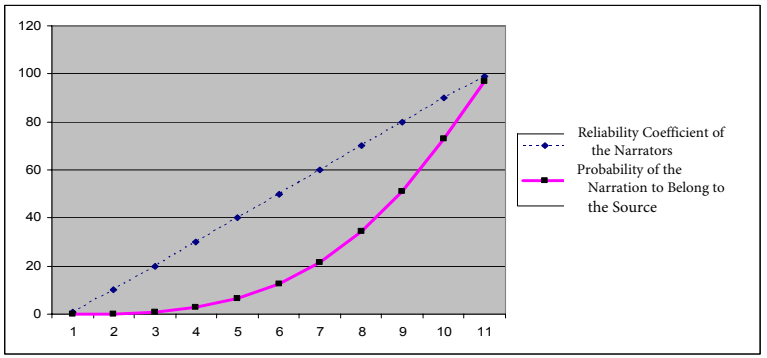
In such a type of isnad[6] the probability that it belongs to the source to which it is attributed is equivalent to the multiplication of the reliability coefficients of the relevant narrators.

$$\omega = \eta_1 * \eta_2 * \eta_3$$

In the table presented below results for the above-mentioned isnad are calculated with regard to the probable status of narrators ranging from the weakest reliability coefficient to the strongest:

Reliability Coefficient of the Narrators	Probability of the Narration to Belong to the Source
%1	%0,0001
% 10	% 0,1
% 20	% 0,8
% 30	% 2,7
% 40	% 6,7
% 50	% 12,5
% 60	% 21,6
% 70	% 34,3
% 80	% 51,2
% 90	% 72,9
% 99	% 97

As it can be easily understood from the table, such a type of isnad structure tends to be quite parabolic. Forwhy, even a minimal drop in the reliability coefficient significantly eliminates the probability that the narration belongs to the source to which it is attributed. As a matter of fact, it can be clearly seen that in spite of the fact that there is a 20% drop in the reliability of narrators the probability that the relevant narration belongs to the source to which it is attributed drops to 51.2%. The reason lying beneath this sharp drop is mainly the fact that this isnad is formed by single narrations. This fact can be more clearly observed in the graphic presented below:

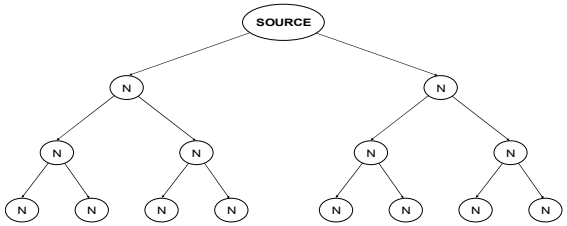


[6] Isnads in the system of Transmission of Hadith consist of multi layers. We used a primary approach in this paper since we are trying to make a theoretical analysis, and therefore isnads are modeled as consisting of three layers.

It is seen that the probability that a narration belongs the source to which it is attributed is how fragile *(parabolic)* in spite of the fact that in the graphic presented below the reliability coefficients of narrators are selected to be linear. Therefore, in order to have a confidence on a narration that comes from such a type of isnad, the narrators who narrate the relevant narration should have a very high level of reliability. This is the reason why the muhaddiths who had become aware of this fact had always approached narrations which were narrated through single narrations with caution.[7]

B. Double Isnads

It means a chain of transmission formed by double narrations.



[7] For instance Ibn Ḥibbān (d. 354) says as follows in the preface of his work *al-Takāsīm va al-Envaʿ*: *I will provide an example in this section in order to give a clearer idea about the method of the research. Let's imagine for a moment that we went nearby to Ḥammād Ibn Salama, and we saw that he transmits a hadith of Prophet Mohammad, peace be upon him, through the transmission chain consisting of Abū Hurayra • Ibn Sīrīn • Ayyūb. It attracts our attention that no one else other than Ḥammād transmits this hadith from Ayyūb. At this point, we should not put the blame on him immediately, and we must be careful. We should look at the ahadith transmitted by his peers. First, we should determine whether this hadith has been transmitted by several students of Ḥammād or only by one of the students of him. If this hadith has been transmitted by several students of him, then it can be understood that this hadith was related by Ḥammād; otherwise if it was passed on from Ḥammād by a weak narrator then this hadith is attributed to him but not to Ḥammād. However, should it be clear that this hadith was passed on from Ayyūb by only Ḥammād although none of the students of Ayyūb had not narrated this hadith to anyone we should stop at this point and we should not blame him for being wrong at first. We should look at whether anyone else other than Ayyūb had narrated this hadith from Ibn Sīrīn. If we can find someone else who narrated this hadith from Ibn Sīrīn, then it is understood that this hadith has a reality. If we determine that there is no one else did it, and then we should look at whether is there any reliable narrator other than Ibn Sīrīn who narrated this hadith from Abū Hurayra. If we can find someone else that narrated this hadith from Abū Hurayra, then it can be judged that this hadith has a reality. If it is determined that there is no such a person then we should look at whether is there any narrator other than Ebû Hureyre who narrated this hadith from Prophet Mohammed (p.b.u.h) If there is such a person then it is judged that this hadith has a reality. If there is no such a person and the hadith itself runs counter to three main procedures then this hadith is determined to be a fictitious hadith, and moreover it is understood that the narrator who narrated this hadith had fabricated it.* (See, Ibn Balbān, ʿAlā' al-Dīn b. ʿAlī (d. 739), al-Iḥsān fī-taqrīb ṣaḥīḥ Ibn Ḥibbān, 18 vols., ed. Shuʿaib al-Arnawūṭ (Beirut: Mu'assasat al-Risāla, 1993/1414), I, 155)

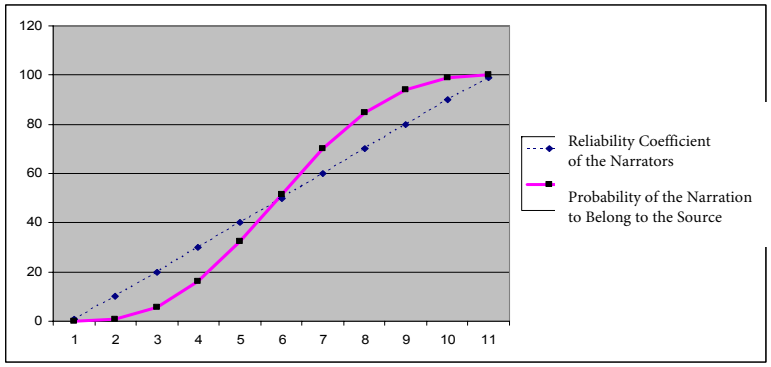
In such a type of isnad[8] the probability that the narration belongs to the source to which it is attributed is calculated by using the reliability coefficients of all of the relevant narrators within the framework of the formula given under the heading double narration.

In the table presented below results for the above-mentioned isnad are calculated with regard to the probable status of narrators ranging from the weakest reliability coefficient to the strongest:

Reliability Coefficient of the Narrators	Probability of the Narration to Belong to the Source
%1	%0,0001
%10	%0.751363
%20	%5.47556
%30	%16.23674
%40	%32.52784
%50	%51.65405
%60	%70.01237
%70	%84.61491
%80	%94.09222
%90	%98.77471
%99	%99.9898

When the table is examined carefully, it can easily be observed that the above mentioned isnad yields results that are quite in line with the reliability coefficients of the relevant narrators. It can be clearly seen that the structure of this isnad is less parabolic but more consistent. As a matter of fact that the probability arising from the isnad above that the narration is coming from the source to which it is attributed is 51.6 % based on unknown narrators in the relevant chain of transmission.

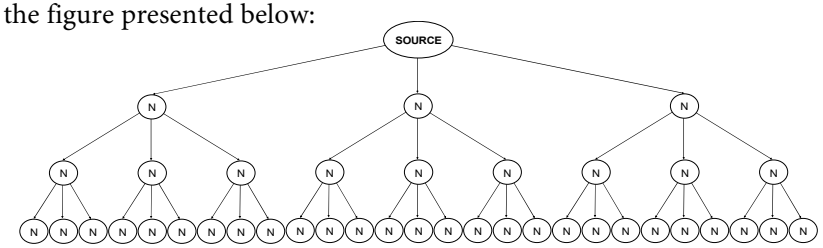
[8] Ibn Ḥibbān notes that in the history of hadith literature there is not any hadith with such a chain of transmission. In this regard, according to Ibn Ḥibbān all ahadith which were reported from the Prophet Mohammad are *ahaad* ahadith (khabar wahid) and they had not reached a number sufficient to qualify as *mutawatir*: "*As far as concerns the ahadith, none of them fulfill all of the conditions to be deemed mutawatir because there is not any hadith which was originated from Prophet Mohammad (p.b.u.h) and that was narrated by two just (adl) narrators of good reputation through a chain of narration consisting of two other just narrators, as just as they are, who narrated such narration through a double strand chains of transmission each consisting of two just narrators of whom each narrated the same hadith through a double strand chains of transmission each consisting of two just narrators.*" (See, Ibn Balbān, al-Iḥsān fī-taqrīb ṣaḥīḥ Ibn Ḥibbān, I, 156)



As it can clearly be seen from the graphic, the curve indicating the probability of the state of belonging of a narration to the source to which it is attributed follows a near path to the straight line of the reliability coefficient of the relevant narrators. On the other hand, another issue that attracts attention is that the curve indicating the probability that the narration belongs to the source which it is attributed extends below the straight line of the reliability coefficient of the relevant narrators in the first half whereas it extends above the same in the second. This can be interpreted that this isnad model yields comparatively more reliable results when based on reliable narrators. On the other hand, unreliable narrators lead to comparatively more unreliable results.[9]

C. Multiple isnads

It means a chain of transmission formed by multiple narrations.[10] A multiple chain of transmissions (isnads) formed by triple narrations is illustrated in the figure presented below:



In such a type of isnad the probability that the narration belongs to the source to which it is attributed is calculated by using the reliability coefficients

[9] Forwhy, the curve indicating the probability that the narration belongs to the source which it is attributed follows a symmetric trend in both of the sections with respect to unknown narrators.

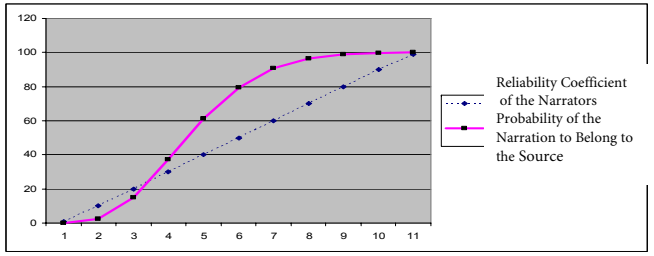
[10] If there is not any double isnad in the system of transmission of hadith, therefore this means that there is not any triple chain of transmission.

of all of the relevant narrators within the framework of the formula given under the heading multiple narrations.

In the table presented below results for the above-mentioned isnad are calculated with regard to the probable status of narrators ranging from the weakest reliability coefficient to the strongest:

Reliability Coefficient of the Narrators	Probability of the Narration to Belong to the Source
%1	%0.002672
%10	%2.354771
%20	%15.08039
%30	%37.43671
%40	%61.20092
%50	%79.56747
%60	%90.85375
%70	%96.6395
%80	%99.11259
%90	%99.8972
%99	%99.9999

As it can clearly be seen from the table, such type of isnad has a structure which is far from being parabolic. So much so that, when the reliability coefficient of the narrators is reduced until 50 % by ten percent each time, the probability that the relevant narration belongs to the source which it is attributed still seems to be very high.[11]



As it can clearly be seen from the graphic, the curve indicating the probability that the narration belongs to the source which it is attributed extends

[11] Thus, the quality and efficiency of a mutawatir is presented numerically with regard to the Probability of Narrations Theory. Nevertheless, it is almost impossible to encounter such a kind of isnad in the hadith literature. However, there are *multi-stranded combined isnads* which are expected to substitute mutewatir chains of narrations that we will focus on in the following sections.

below straight line of the reliability coefficient of the relevant narrators in the first quadrant whereas it extends above the straight line in the remaining three-fourths. Therefore narrations which are transmitted by such types of isnad channels would most likely to belong to the source to which they are attributed unless the reliability levels of the relevant narrators are very low.[12]

D. Combined Isnad

It means combined chain of transmission formed by the combination of single, double and multiple narrations. In the history of hadith literature majority of the types of isnads appears as combined isnads. There are several types of combined isnads.

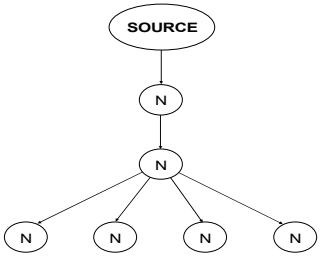
1. Single stranded combined isnad

It means a combined isnad with a single strand of chain of transmission.[13] Single stranded isnads hold an important place in the history of hadith literature. Single stranded combined isnads are divided mainly into three groups:

a. Single stranded combined isnad that was originated from a single narration

It is possible to classify this type of isnad into three groups:

a1. Single stranded combined isnad in which a single narration is similarly followed by a single narration



In the table presented below results for the above-mentioned isnad are cal-

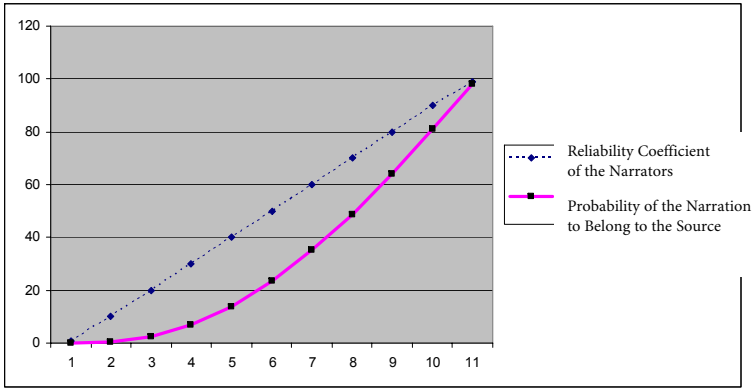
[12] In a model of multiple isnad the power of the concept of isnad appears blindingly obvious so that the level of the reliability of the narrators in a chain of transmission drops to the second place and turns into an argument which has less influence on the result whereas in types of isnads with a parabolic structure the reliability levels of narrators come to the forefront as a decisive factor.

[13] The concept of strand means the number of channels it relies (in other words depends) upon in the layer where the chain of transmission tends to be weakest. For instance, if a chain of transmission relies upon on only a single narrator this chain of transmission is deemed to be single-stranded.

culated with regard to the probable status of narrators ranging from the weakest reliability coefficient to the strongest:

Reliability Coefficient of the Narrators	Probability of the Narration to Belong to the Source
%1	%0.000394
%10	%0.3439
%20	%2.3616
%30	%6.8391
%40	%13.9264
%50	%23.4375
%60	%35.0784
%70	%48.6031
%80	%63.8976
%90	%80.9919
%99	%98.01

As it can clearly be seen from the table the probability that the narration belongs to the source to which it is attributed still remains below 50 % although the reliability coefficient of narrators reaches to a level of 70 %. One can easily observe a structure very similar to the parabolic structure observed in the single isnad above.[14] This similarity can easily be seen in the graphic presented below.



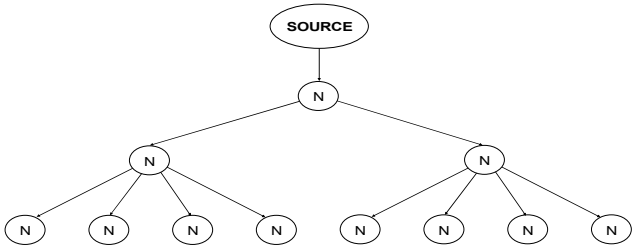
Bu isnad türünün tekli isnattan yegâne farkı ikinci raviden sonra tekli bir rivayet değil de çoklu bir rivayetin gelmiş olmasıdır. Bu durum rivayetin kaynağa ait olma ihtimali eğrisinde görece bir iyileşmeye yol açmışsa da neti-

[14] Forwhy, chains of transmission of single isnad also have a single stranded structure of chain.

ceye tesir edecek bir düzeye ulaşmamıştır. Zira yukarıdaki isnad yapısı hala çok kırılgan görünmektedir.

The only difference of this type of isnad from the single isnad is that the second narrator is followed by multiple narrations instead of a single narration. This situation leads to a relative improvement in the curve indicating the probability that the relevant narration belongs to the source to which it is attributed; however this improvement is not a significant one, and in fact it has not reached a sufficient level to affect the result. Forwhy, the structure of the isnad above still seems to be very parabolic.

a2. Single stranded combined isnad in which a single narration is followed by a double narration

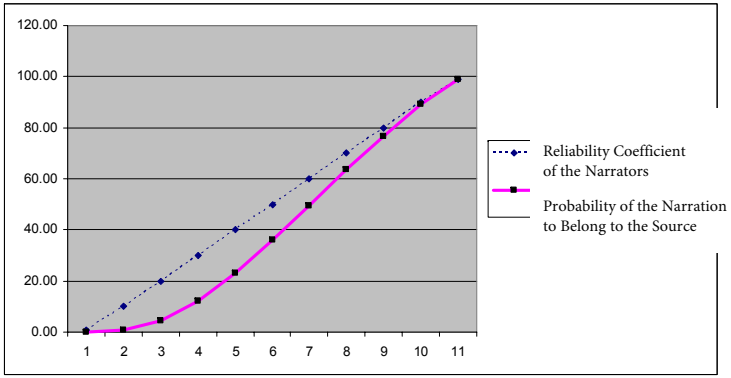


In the table presented below results for the above-mentioned isnad are calculated with regard to the probable status of narrators ranging from the weakest reliability coefficient to the strongest:

Reliability Coefficient of the Narrators	Probability of the Narration to Belong to the Source
%1	%0.0007
%10	%0.6759
%20	%4.4443
%30	%12.1190
%40	%23.004
%50	%35.888
%60	%49.648
%70	%63.459
%80	%76.758
%90	%89.098
%99	%98.99

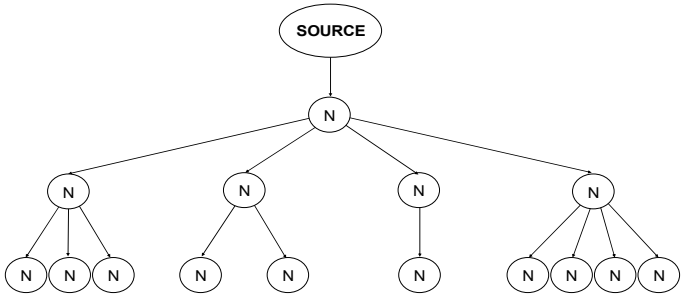
It seems that the result is significantly affected when a single narration is followed by a double narration. It is seen that the parabolic structure observed in the preceding type of isnad is a little more improved. When the table is

examined, it can easily be seen that the probability that the narration belongs to the source to which it is attributed exceeds 50 % level when the reliability coefficient of the relevant narrators is above 60 %. This improvement can clearly be observed in the graphic presented below:



It is seen that the curve indicating the probability that the narration belongs to the source which it is attributed has significantly improved compared to the precedent type of isnad and it has come close to the straight line indicating the reliability coefficient of narrators. This improvement is more significant in particular in cases where the reliability coefficient of narrators reaches to a level above 50 %.

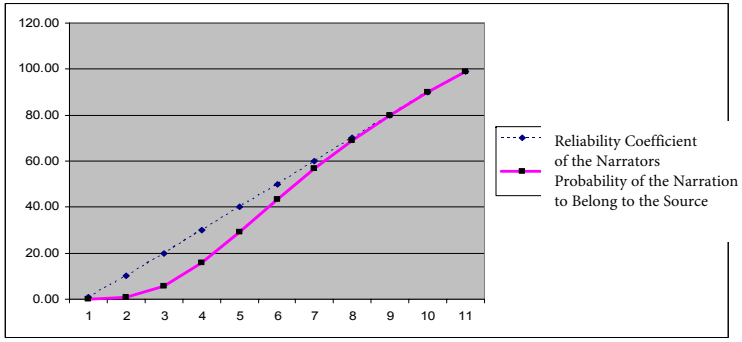
a3. Single stranded combined isnad in which a single narration is followed by a multiple narration



In the table presented below the results are calculated progressively in stages with regard to the probable status of narrators ranging from the weakest reliability coefficient to the strongest:

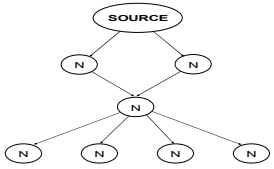
Reliability Coefficient of the Narrators	Probability of the Narration to Belong to the Source
%1	%0.00
%10	%0.88
%20	%5.85
%30	%15.77
%40	%29.02
%50	%43.23
%60	%56.71
%70	%68.83
%80	%79.75
%90	%89.98
%99	%99.00

When the table is examined it can easily be observed that the structure this type of isnads give almost a linear response for reliability coefficients of narrators above 50 %. However, the system is still relatively parabolic for values below 50 %. This situation can clearly be observed in the graphic presented below:



In the graphic presented below, it is seen that the curve indicating the probability that the narration belongs to the source which it is attributed follows almost a linear path for values above 50 %.

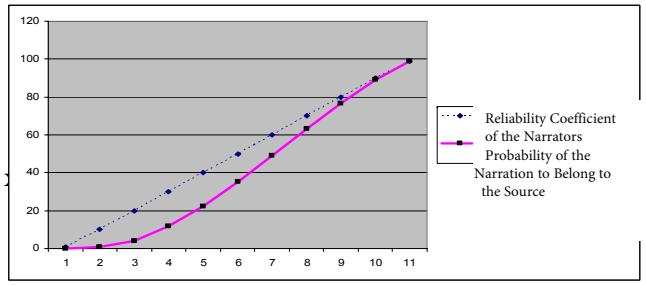
b. *Single stranded combined isnad that was originated from a double narration*



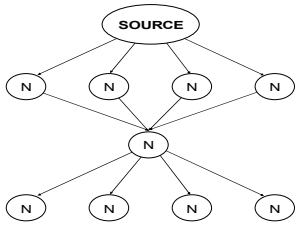
In the table presented below the results are calculated progressively in stages with regard to the probable status of narrators ranging from the weakest reliability coefficient to the strongest:

Reliability Coefficient of the Narrators	Probability of the Narration to Belong to the Source
%1	%0.00
%10	%0.65
%20	%4.25
%30	%11.63
%40	%22.28
%50	%35.16
%60	%49.11
%70	%63.18
%80	%76.68
%90	%89.09
%99	%98.99

When we compare a single stranded combined isnad that was originated from a double narration with a single stranded combined isnad in which a single narration is similarly followed by a single narration we reach to the following result: The result is partially improved when the isnad was originated from a double narration although it depends on a single narrator. This premise is supported by the results illustrated in the table. When the table is examined it can clearly be seen that the results illustrated in this table are significantly different from those illustrated in the other



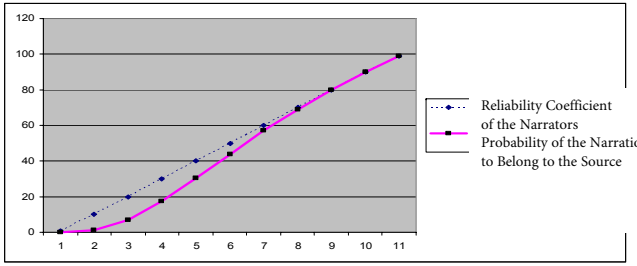
c. Single stranded combined isnad that was originated from a multiple narration



In the table presented below the results are calculated progressively in stages with regard to the probable status of narrators ranging from the weakest reliability coefficient to the strongest:

Reliability Coefficient of the Narrators	Probability of the Narration to Belong to the Source
%1	%0.00
%10	%1.18
%20	%6.97
%30	%17.32
%40	%30.30
%50	%43.95
%60	%56.97
%70	%68.87
%80	%79.74
%90	%89.98
%99	%99.00

The improvement in the probability that the relevant narration belongs to the source to which it is attributed is more significant in this type of isnad. If a narrator declares that he heard the narration from more than one person but not from a single person then it is observed that this declaration significantly affects the result. This impact is more significant in particular in cases where the reliability coefficient of narrators is above average. This improvement can clearly be observed in the graphic presented below:



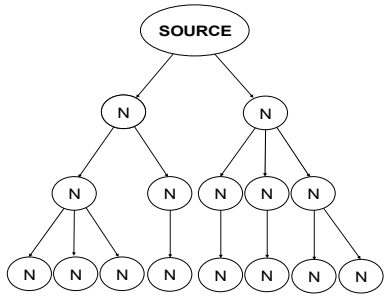
It is observed that the curve indicating the probability that the narration belongs to the source which it is attributed follows a linear path on the second half of the straight line indicating the reliability coefficient of narrators whereas it follows a parabolic path at a certain scale in the first half.

In the graphics illustrating single stranded isnads the point that attracts attention is the fact that the curve indicating the probability that the narration belongs to the source which it is attributed continuously extends below the straight line indicating the reliability coefficient of narrators and follows a parabolic path in particular in cases where the reliability coefficients are low.

2. Double stranded combined isnad

It means a combined isnad with a double strand of chain of transmission. Double stranded combined isnads are divided mainly into two groups:

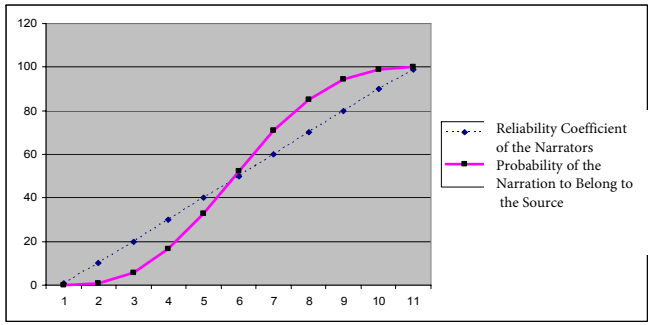
a. Double stranded combined isnad that was originated from a double narration



In the table presented below the results are calculated progressively in stages with regard to the probable status of narrators ranging from the weakest reliability coefficient to the strongest:

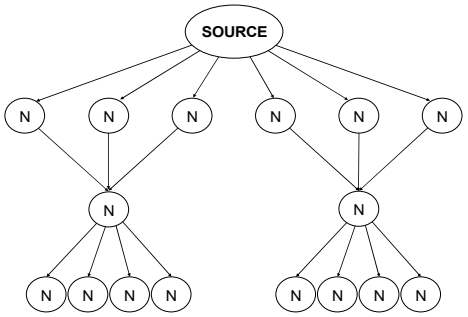
Reliability Coefficient of the Narrators	Probability of the Narration to Belong to the Source
%1	%0.00
%10	%0.75
%20	%5.51
%30	%16.43
%40	%33.00
%50	%52.41
%60	%70.84
%70	%85.23
%80	%94.35
%90	%98.81
%99	%99.99

We encounter a table which is very similar to the one we see in the double isnad model.[15] This isnad structure produces the same level of response for the probability of the relevant narration to belong to the source which it is attributed against the level of the reliability of the narrator at an average level whereas the intensity of the response becomes stronger and more distinctive on the same direction in line with the intensity of increases or decreases in reliability of narrators.



As it can be clearly seen that the curve indicating the probability that the narration belongs to the source which it is attributed extends below the straight line indicating the reliability coefficient of narrators on the first half of the straight line whereas it extends above that straight line in a symmetrical manner on the second half.

b. Double stranded combined isnad that was originated from a multiple narration



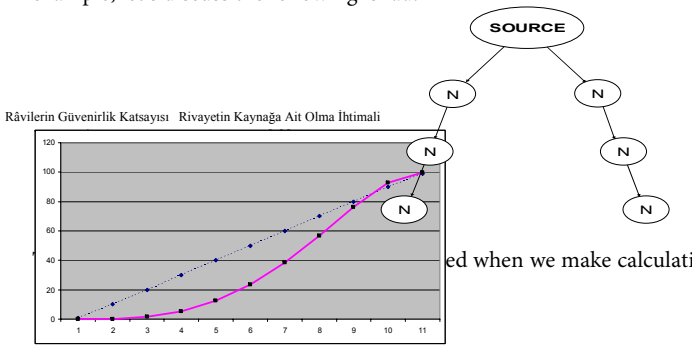
In the table presented below the results are calculated progressively in stages with regard to the probable status of narrators ranging from the weakest reliability coefficient to the strongest:

[15] As a matter of fact, a double isnad has a double stranded structure of chain.

Reliability Coefficient of the Narrators	Probability of the Narration to Belong to the Source
%1	%0.00
%10	%1.86
%20	%11.19
%30	%27.71
%40	%47.14
%50	%65.21
%60	%79.50
%70	%89.48
%80	%95.69
%90	%98.98
%99	%99.99

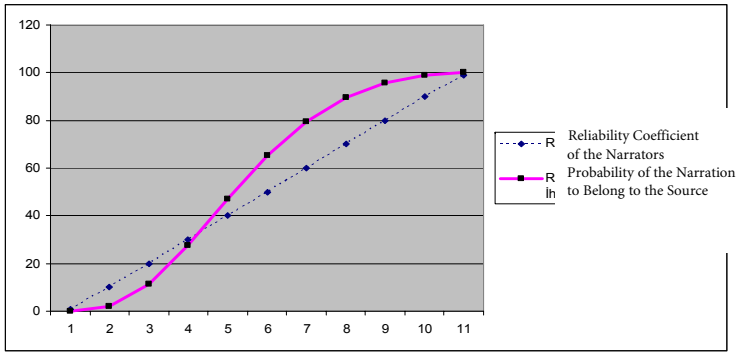
When the table is examined, the probability that a narration belongs to the source to which it is attributed sharply increases starting from a point in line with the reliability coefficient of narrators. This type of isnad has a structure which is quite far from a parabolic structure thanks to its double stranded structure. When the graphic presented below is examined, it can clearly be seen that the curve indicating the probability that the narration belongs to the source which it is attributed extends above the straight line indicating the reliability coefficient of narrators in the shape of an *S*.[16] This is a general characteristic feature of isnads that have more than one strand.[17]

[16] Even in double stranded chains of transmission which are most deprived of peer support the curve indicating the probability that the narration belongs to the source which it is attributed takes an *S* shape. Nevertheless the upper hook of the *S* in such isnads is relatively small. For example, let's discuss the following isnad:



ed when we make calculations for this isnad.

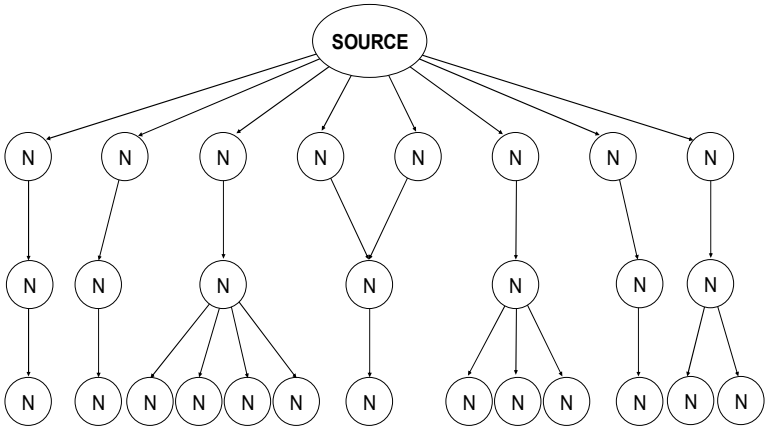
[17] It is not possible to encounter a situation like this in chains of transmission with a single strand. Forwhy, the system on this type of isnads depends on the reliability coefficient of a single narrator. Consequently this factor prevents the curve indicating the probability that



It is seen that the top hook of the *S* curve extending above the straight line of the reliability coefficient is larger than its bottom hook, and this is an indicator that proves how sound the structure of the relevant isnad is and accordingly how high the probability that the relevant isnad belongs to the source to which it is attributed.

3. Multi stranded combined isnad

It means a combined isnad with multiple strands.

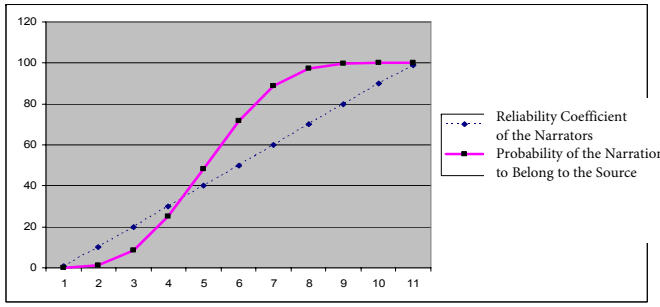


In the table presented below the results are calculated progressively in stages with regard to the probable status of narrators ranging from the weakest reliability coefficient to the strongest:

the narration belongs to the source which it is attributed from following a path above the straight line of the reliability coefficient of narrators.

Reliability Coefficient of the Narrators	Probability of the Narration to Belong to the Source
%1	%0.00
%10	%1.20
%20	%8.64
%30	%25.12
%40	%48.35
%50	%71.82
%60	%88.91
%70	%97.34
%80	%99.73
%90	%99.99
%99	%99.99

The most important point to be highlighted in this type of an isnad is the high level of the reliability coefficients of narrators which exceed a certain level. If this high level of reliability is ensured then the result will depend solely on the structure of the relevant isnad. As a matter of fact, the isnad above shows quite positive results for reliability coefficients over 40 % thanks to its multi stranded structure. However, the system immediately reverses and turns right around for lower reliability coefficients. As seen in the graphic presented below this situation corresponds to the bottom hook of the *S* shaped curve the probability that the narration belongs to the source which it is attributed.[18]



[18] In this type of isnad the bottom hook of the *S* curve is quite small. The system turns into negative only for reliability coefficients less than 25 %. The reason for this fact is the multi-stranded structure of the isnad. Judging from this point, it can be said that multi-strand isnads yield results which strengthen the final results may be not as much as multiple but very close to multiple isnads. As a matter of fact, the graphic of this multi-strand isnad is very similar to the graphic structure of multiple isnad above.

Evaluation

It is seen that some types of isnads generate relatively linear responses at certain intervals with regard to increase in the reliability coefficient of narrators whereas some others generate a parabolic response on the positive or negative direction. As a matter of fact, a slight decline in the reliability coefficient of narrators generates a strong impact (parabolic response) on some types of isnads with regard to their percentage of probability that the relevant isnads belong to the source to which they are attributed to whereas generates almost a linear impact on some types of isnads with regard to their percentage of probability with regard to their status of belonging. When it is looked from this point of view, it can be said that the single isnad has the most fragile structure among the types of isnads. On the other hand, it is understood that the double and multiple isnads have the healthiest and most sound structure.

The isnad of a hadith is required to prove the reality and reliability of the narration. This is the main purpose of the concept of isnad. However, for this purpose two concepts come to the forefront. The first one of these two concepts is the *type of isnad* and the other one is the *reliability coefficients* of the narrators, in other words of the persons who transmit the relevant narrations.

A discussion to find out which of these two arguments is more important may appear to be a shallow approach to handle the issue. Forwhy, the issue is more complex than it seems at the first sight. As a matter of fact, from time to time *the structure of the isnad* plays a decisive role in determining the probability of the relevant narration to belong the source to which it is attributed whereas from time to time *the reliability coefficient of narrators* plays a more decisive role.

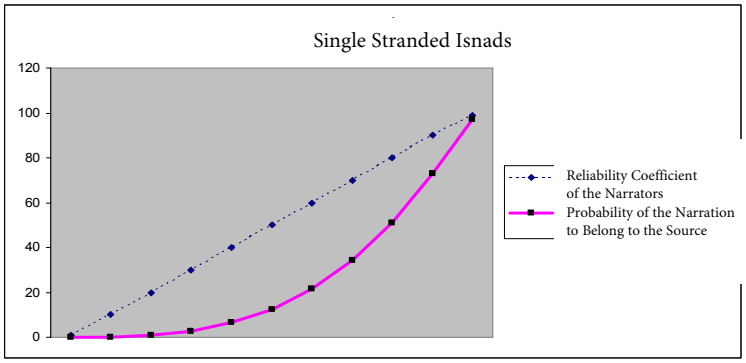
Let's classify the isnads which we examined thoroughly in this paper into two categories only for the purposes of evaluation:

i) Single stranded isnads

ii) Multi-stranded isnads

These two types of isnads differ from each other with very distinctive lines in terms of their efficiency. In our study, in the graphics it is clearly seen that all of the single stranded isnads the curve illustrating the probability that the narration belongs to the source which it is attributed always followed a path which is below the straight line of the reliability coefficient of narrators.[19]

[19] As seen from the graphic, in single strand isnads the straight line indicating the reliability coefficient of narrators forms a *D* shape together with the curve indicating the probability that the narration belongs to the source to which it is attributed. When the single strand isnad is simple (in cases where a single narration is followed by a single narration) the center of the *D* shape gets wider whereas in single strand isnads supported with many narrators the



Consequently, in single stranded isnads, for a probability of higher than 50 % that the relevant narration belongs to the source to which it is attributed always requires a high reliability coefficient of narrators. For example, this type of an isnad would remain inadequate in order to reach a positive result in terms of narrators who have a reliability coefficient of between 50 % and 65 % (we think that there are so many in the history of hadith literature). On the other hand, the reliability coefficient of the narrator who constitutes the reason that the relevant narration to originate from only one source and to be narrated by only one narrator has prior importance compared to other factors. Forwhy, the system completely depends on this narrator.[20]

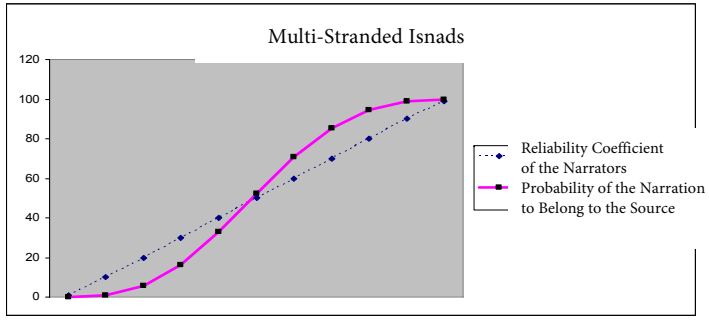
In conclusion, we can say that the degree of the probability that the narration belongs to the source to which it is attributed to a large extent depends upon the reliability coefficients of narrators. In other words, the probability that the narration belongs to the source to which it is attributed may prevail over the low values based on the higher values of reliability coefficients of narrators. Forwhy, this type of isnads adversely affects the probability that the relevant narration belongs to the source to which it is attributed.[21]

center of the *D* shape gets narrower starting from the upper part. The fragility of the system increases in line with the width of the center part of the *D* shape, in other words it means that it yields a negative result for a wide range of reliability coefficient of narrators. Such an unfavorable spiral chain of transmission (isnad) can only be overcome by very high levels of reliability coefficients of narrators.

[20] In our paper, in order to make it more easily understandable we collected reliability coefficients of narrators in one single variable. This is because the purpose of our study is only the determination and analysis of isnad categories. In a more comprehensive study, it can be focused on the reliability coefficients of narrators by assigning different variables to them each time and then the results obtained can be examined thoroughly.

[21] Now at this point, an important question comes to the mind: what is the percentage of single strand isnads and multi stranded isnads in the system of transmission of hadith? As far as we

The situation is quite different in isnads which have more than one strand. Single stranded isnads always generate a prototype response for all value ranges of the reliability coefficient of narrators which pulls the results down, in other words which weakens the results whereas isnads with more than one isnad generate two different responses with regard to different value ranges of the reliability coefficient, namely from time to time *strengthening* and from time to time on the contrary *weakening*.[22]



This double standard response of the multi strand isnad system leads the curve indicating the probability that the narration belongs to the source which it is attributed to form an *S* shape above the straight line of the reliability coefficient of narrators.

Consequently, it seems that such a type of isnad system is appropriate and suitable for narrators who have a reliability coefficient of between 50 % and 65 % (we think that there are so many in the history of hadith literature) in terms

know, there is not any study that has been performed on this subject. However, general opinion on this subject matter is that the majority of isnads consists of single strand isnads.

22 The isnad system consisting of more than one strand generally has a *weakening* affect for subgroup of reliability values of narrators whereas has a *reinforcing* (strengthening) affect in terms of superior group of reliability values of narrators. The frontier point of the value range of both transactions is determined by the structure of the relevant multi strand isnad. For example, a double stranded combined isnad that was originated from a double narration has a weakening affect on the result between the ranges of 0 and 48 % of reliability coefficient of narrators whereas it has a strengthening affect on the result between the ranges of 49 and 100 % of reliability coefficient of narrators. On the other hand, double stranded combined isnad that was originated from a multiple narration has a weakening affect on the result only between the ranges of 0 and 33 % of reliability coefficient of narrators whereas it has a strengthening affect on the result between the ranges of 34 and 100 % of reliability coefficient of narrators. In the graphics, this situation appears in the size of the upper or bottom hook of the curve in the shape of *S*. The hook is either large or small with regard to its weakening or strengthening affect.

of reaching a positive result with regard to the probability that the relevant narration belongs to the source to which it is attributed. However, nevertheless the reliability coefficients of the relevant narrators who form the strands of the chains of transmission (isnad) play a more decisive role in determining the nature and quality of the relevant narration compared to other factors. As a matter of fact in double stranded isnads the system runs over two narrators whereas in triple strand chain of transmissions the structure completely relies on three narrators.

As a result, it can be said that in isnads that have more than one strand the isnad generally has a positive reinforcing effect in the probability that the relevant narration belongs to the source to which it is attributed to show a positive trend. In this type of isnads the reliability coefficient of narrators drops to the second place. Forwhy, the system continuously supports within a certain range and to the maximum extent possible the probability that the relevant narration belongs to the source which it is attributed.[23]

"Isnad Models in the System of Transmission of Hadith and Their Evaluation According to the Probability of Narrations Theory"

Abstract: In the system of transmission of hadīth, the nature and quality of the isnad is as important as the reliability of its transmitters in determining the state of belonging of a narration to the source to whom it is attributed. Certain types of isnad are so predominant in determining the probability of a hadith to be authentic that they might oblige the factor of the reliability of its transmitters to remain in the background. When viewed from this point of view, it seems that there is a need to have a categorical approach to the isnad models based on the probability of narrations theory and investigation and analysis of its potential effects on the results. The purpose of this paper is to make a theoretical analysis in this framework and to discuss its probable results.

Citation: Halis Aydemir, ""Isnad Models in the System of Transmission of Hadith and Their Evaluation According to the Probability of Narrations Theory", *Hadis Tetkikleri Dergisi* (*HTD*), VII/1, 2009, pp. 29-54.

Key Words: Riwaya, isnad models, hadīth, probability calculations, mathmetical analysis.

23 As we mentioned above, the range and magnitude of this support is determined by the structure of the relevant multi strand isnad.