

# Market Acceptance of a Murabaha-Based Finance Structure within a Social Network of Non-Islamic Small and Medium Enterprise Owners in African Procurement

Craig M. Allen

**Abstract**—Twenty two African entrepreneurs with Small and Medium Enterprises (SMEs) in a single social network centered around a non-Muslim population in a smaller African country, selected an Islamic financing structure, a form of *Murabaha*, based solely on market rationale. These entrepreneurs had all won procurement contracts from major purchasers of goods within their country and faced difficulty arranging traditional bank financing to support their supply-chain needs. The *Murabaha*-based structure satisfied their market-driven demand and provided an attractive alternative to the traditional bank-offered lending products. The *Murabaha*-styled trade-financing structure was not promoted with any religious implications, but solely as a market solution to the existing problems associated with bank-related financing. This indicates the strong market forces that draw SMEs to financing structures that are traditionally considered within the framework of Islamic finance.

**Keywords**—Africa, entrepreneurs, Islamic finance, market acceptance, *Murabaha*, SMEs.

## I. INTRODUCTION

MULTIPLE authors (e.g., [1], [4], [5]) have introduced Islamic finance structures by relying primarily upon the underlying religious principles that give rise to these structures' popularity. However, there also can be economic reasoning and pure market forces that lead to the adoption of these structures that has little to do with the religious attitudes of market participants. This is particularly true of trade-related structures such as *Murabaha* that involve the purchase and sale of real, tangible goods.

Ayub [1], for example, points to the specific conditions of *Murabaha* as those being associated generally with an 'ordinary sale' of tangible goods. His principal list of conditions might be shortened and summarized as:

- 1) The goods should be tangible items.
- 2) There should be no debt involved in the transaction.
- 3) The buyer and seller should both know the original price of the goods.
- 4) The conditions and specifications of the goods should be fully known to both buyer and seller.
- 5) The profit or margin earned by the seller should be fully disclosed to the buyer.

These same conditions, however, are associated with good business relationships, regardless of religious affiliation.

C. Allen is currently C. F. O. of Kountable Inc. a fin-tech start-up that has generously provided data, as well as having supported the research and writing of this article, United States (e-mail: craig@kountable.com).

The present study presents a situation where a population of non-Islamic entrepreneurs, each associated with a Small and Medium Enterprise (SME), elected to use a *Murabaha*-structured transaction based on a market rationale, rather than on a religious rationale.

This population of entrepreneurs is associated by locale and by social ties into what would be considered a single social network. The ways that social networks affect the progress of business, especially in entrepreneurship, is considered a fascinating topic for research (e.g., Dowla [3] and Light & Dana [6]). In this situation, the subjects of study were all linked by geography and generally by industry grouping. As is shown below, they also are linked by social ties, such as phone calls and common e-mail exchanges.

## II. THE STUDY

A study of actual market participants within a single social network, each facing an economic challenge, was undertaken. A *Shariah* derived financing solution, most closely related to *Murabaha*, was presented to each entrepreneur, without disclosing the religious derivation of the product, nor the implications with respect to Islamic-finance principles. The solution was presented in purely an economic context. The 'follow-on' behavior of each entrepreneur in the network was observed.

### A. The SME Entrepreneurs

The SME entrepreneurs in this study were all associated with a single capital city in a smaller country in Africa, which country would classify as 'lesser-developed' in most categorizations. (The identity of the city and country are intentionally omitted to help preserve the anonymity of the entrepreneurs.) Each of these SME owners was the winner of a competitive procurement contract offered by a 'major' purchaser (e.g., a government entity, a major corporation or non-government organization). These procurement contracts generally involved the importation of goods from other more-developed markets and the goods to be purchased for each transaction had an average purchase cost near USD \$100,000.00. Each of these SME businesses had between 2 and 10 employees.

The SME owners generally were considered to have relatively good credit, but found traditional banking

relationships difficult to secure. This was primarily due to the entrepreneurs' lack of unencumbered collateral sufficient to satisfy bank requirements for a traditional collateralized loan. Consequently, the SME owners generally found it difficult to secure personal or business loans sufficient to purchase the goods required to fulfill their procurement contracts.

Each of the SME owners did, however, have a good reputation within the community for the execution of their business processes. And, each was generally well connected to other entrepreneurs, business owners and to the individuals at the 'major' purchasers issuing the procurement contracts. These social and business relationships (considered social capital) were sufficient for the SME owner to win the contract, but were not convertible into economic value sufficient to obtain loans from their banks.

### B. The Procurement Contracts

The procurement contracts issued by the 'major' purchasers consisted of purchase orders issued to the SME that required the importation of some tangible goods. These goods were generally available from suppliers located in more developed countries.<sup>1</sup>

The projects involved the import of computer equipment, communication technology, peripheral devices, supplies relating to information or communication technical services and some general technical equipment. Each SME entrepreneur submitted, on average, two financing requests, with the maximum being five and the minimum being one. Meaning that even though they were rejected for the supply-chain finance the first time, many continued to request funding for additional projects until they were successful.

The procurement contracts were all issued by financially strong counterparts. While the market in question is a developing market, the 'financially strong' counterparts did include government entities, including various ministries and departments, entities supported by non-government organizations (NGOs), and large public and private corporations.

Banking institutions would generally view the procurement contracts won by these SME entrepreneurs as valuable - but subject to the *execution risk* of the SME entrepreneur. In other words, one of the primary risks in these procurement contracts involves the non-performance (or sub-optimal performance) of the SME in fulfilling the requirements of the contract. Such requirements might be as minimal as simply delivering the goods ordered, or, in some cases, the fulfillment requirements might be greater, including installation (e.g., of computing or communication equipment) or integrating with other communication equipment (e.g., as in connecting to a network system). In general, the skills required of the SME in fulfilling

<sup>1</sup>Often computing and communications technology products, even though manufactured in the U.S. or Europe, are sold into Africa from the Middle East (e.g., Dubai). This reflects both the greater willingness of the Middle East sellers to work with the complexities of African trade as well as the common discounting that is available for older equipment that often becomes the staple for procurement projects within Africa.

the procurement contract were well within the technical expertise of the entrepreneur and their SME organization.

The single greatest risk to execution of these procurement contracts usually involved the failure of the SME owner to obtain sufficient financing to fulfill the purchase requirements of the contract. Thus, if the goods covered by the procurement contract had a cost to the SME of USD \$100,000, then the entrepreneur would usually need to find financing to cover the entire cost of the purchase and shipment of those goods - of \$100,000 for the goods plus \$10,000 to \$15,000 in shipping costs. In most circumstances that presented themselves to us, the entrepreneurs had failed at obtaining this financing.

By way of explanation, in most developed markets, suppliers of goods are willing to ship goods with favorable commercial terms to *bona fide* purchasers. Those favorable terms might include deferring the payment requirement from the purchaser for 45 or 60 days beyond the shipping date. In most African markets, for most of the products involved in these procurement contracts, these favorable payment terms were not available. Instead, the sellers of these goods generally required either payment in full by the purchaser *prior* to shipment, or they required the establishment of a bank instrument (e.g., a Letter of Credit - or 'LOC') that would guarantee the payment of the cost of the goods and associated transport. While these SME entrepreneurs generally are credit worthy, and generally have won the trust and goodwill of the procuring entities, they usually do not have strong balance sheets. Consequently, the banks to whom they approach for financing look at the small balance sheets and lack of 'in-country' collateral, and determine that they cannot make good credit-based loans to these entrepreneurs.<sup>2</sup>

### C. The SME Owners' Social Network

The accompanying Fig. 1 represents the social network of the entrepreneurs based upon phone call logs extracted from the entrepreneurs' mobile telephones. The circles are the *vertices* and the connecting lines represent phone calls. The largest circles in the figure represent the 22 SME entrepreneurs, with the smaller circles representing other individuals.

The social network was obtained by extracting the individual phone records of the 22 SME entrepreneurs (which they graciously permitted for purposes of, among other things, 'Know Your Customer' (or 'KYC') analysis, as well as for other evaluative processes).<sup>3</sup> The phone-call logs of the entrepreneurs were collapsed into a single network based upon

<sup>2</sup>Banks often have regulatory 'capital requirements' based upon the credit characteristics of the loans that they make. If the principal collateral that would secure a loan were to be located *outside* of the country of the bank, then many bank regulators would require 100% bank capital to support that collateral-deficient loan. Meaning that the bank, instead of being able to borrow 80-90% of the loan balance from the inter-bank financing markets, would be required to use 100% bank equity, with *no* inter-bank borrowing, to support that loan. This is a very expensive proposition for the bank, and most banks would generally refuse to provide such a loan.

<sup>3</sup>KYC analysis is required by global banking best-practices before allowing financial transactions to be executed on behalf of a customer. In this case, the phone logs were scrutinized to search for calls to sanctioned countries, sanctioned individuals, or to individuals whose names appear on public databases of unsavory individuals.

Social Analytics Lead Visualization for AfrInterior – Industry: tech

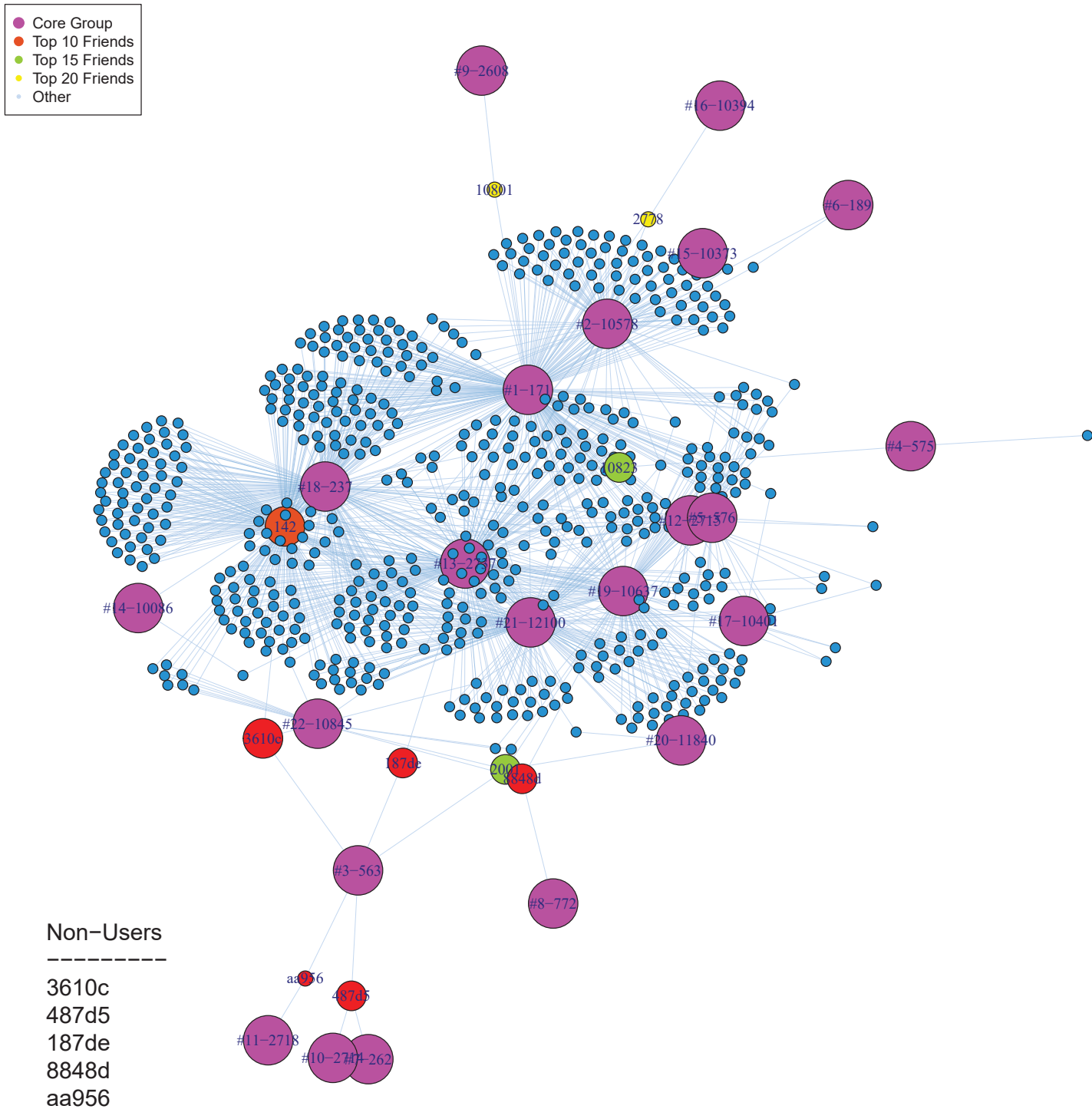


Fig. 1 Structure of Social Network

the ‘merged’ identities of the numbers called – so that calls to a unique number on one phone (each unique phone number comprising a *vertex* or *node* within the network) that matched the same number called from another entrepreneur’s phone were both considered the ‘same’ vertex.

This social network is a highly *reduced* network, from which nodes in the original social network with degree less than 2 have all been removed. Thus, by beginning with the full calling network of these twenty two entrepreneurs - which consisted of 16,222 different vertices, or 16,222 unique

TABLE I  
 NORMALIZED BETWEENNESS MEASURES

User Betweenness & Ranking		
uid	betweenness	ranking
171	0.4823207	1
237	0.2086137	3
2737	0.2055791	4
12100	0.1272640	5
10637	0.1137811	6
10578	0.0257563	7
563	0.0164828	8
2715	0.0148872	9
575	0.0033003	19
576	0.0030293	20
10845	0.0019097	21
10086	0.0005837	42
10401	0.0004062	64
11840	0.0000897	291
189	0.0000027	295
262	0.0000000	602
772	0.0000000	603
2608	0.0000000	604
2714	0.0000000	605
2718	0.0000000	606
10373	0.0000000	566
10394	0.0000000	607

people that were within the extensive calling network of these 22 SME owners - and then removing those vertices that were in communication with only a single party among the original 22 SME entrepreneurs, we are left with a reduced set of 607 unique vertices that represent the most tightly connected individuals within their common social network. In other words, these remaining 607 vertices in this reduced network represent the most tightly interconnected people in the communication network of the entrepreneurs. Each vertex has at least 2 connections - implying that each person in this smaller group is communicating with at least 2 people within the group.

In the nearby Table ?? we have a sorted listing of the relative 'betweenness' measures<sup>4</sup> for each of our entrepreneur users (captioned as 'uid' for 'user identifier'), and the rank of that betweenness measure among all of the 607 vertices that remain in the reduced social network. Note that many of the users have a betweenness measure of 0.0 - which means that these individuals are on the periphery of this reduced social network we have identified. That is, they connect to others within the network, but they are not positioned *between* other vertices.

The most central vertex to the network is *uid* = 171. This individual is, by far, the most central person in this social network. This is followed by *uid* = 237 and *uid* = 2737. These three vertices are the most central to the other nodes in the network - and thus are shown to have the most central role in communications among group members. They communicate with more of the SME owners, with many paths of communication going most directly through them, reinforcing their role as central 'power brokers' within the network.

<sup>4</sup>For a good discussion of the meaning of 'betweenness' see Carrington, et al. [2] or Wasserman [8]. Both provide great descriptions of this measure - which relates to how 'in-between' each vertex is to each of the other vertices.

#### D. The Financial Offering

Each of the SME owners was invited to apply to receive financing for their procurement contract. The financing was designed to follow *Murabaha* principles. That is, the financing possessed the following characteristics:

- 1) The goods were tangible items that were the subject of a procurement contract, won by the SME entrepreneur.
- 2) Instead of *lending* to the SME owner, as a bank might consider, the current structure involved the purchase and sale of goods (consistent with a *Murabaha* structure), where the SME owner was permitted to delay payment (in this case to us, Kountable Inc.) until payment was received from the procuring party. There was no explicit debt, *per se*.
- 3) The SME owner would source the goods needed to fulfill the procurement contract - and upon successful underwriting - we (Kountable) as intermediate purchaser would buy the goods from the supplier selected by the SME entrepreneur and *re-sell* the goods to the entrepreneur at a fully-disclosed mark-up (or profit) that corresponded to the time and risk associated with the transaction.
- 4) The SME owner, as source of the supplier and specifications needed to fulfill the procurement contract, was instrumental in identifying the conditions and specifications of the goods that were to be purchased. We, Kountable, as intermediate purchaser, were also fully involved in the verification of specifications and conditions for delivery of the goods on to the SME.
- 5) The profit or margin earned by Kountable for its role as intermediate purchaser was fully disclosed to the SME owner.

One additional feature that was added to the structure to support prudent investment control, was that Kountable also inserted itself via a deposit-account control agreement into a relationship with the SME owner's bank - whereby Kountable was able to take a senior position (though not a *risk-free* position) in the payment distributions, so that in effect Kountable claimed its payment for the goods *prior* to the SME owner being able to receive the residual payment from the procuring entity. Thus Kountable was 'Senior' in collection rights of the payments - and the SME maintained a 'Junior' or subordinated position in the collection. We thus received payment for our purchase of goods and for our profit before distributing the remainder of collections on to the SME entrepreneur.

### III. SME ACCEPTANCE OF STRUCTURE

As is apparent in Fig. 1, *all* of the SME entrepreneurs within the social network ended up requesting this particular structure for financing. The SME entrepreneurs were either known to be non-Muslim (generally Christian) or the religious affiliation was unknown. Thus, acceptance of this *Murabaha* structure for financing the SME supply-chain was not based upon religious principles, *per se*, but rather upon market conditions that suggested this financing structure was superior to alternatives that were then available.

The relative strengths of this financing structure, over traditional bank lending structures can be posited, as follows:

- The 'Commercial' nature of the transaction (i.e., the buying and selling of the goods) provided an alternative to the traditional collateral-based security structure required by the banks. In the offered structure, title to the goods created an implicit lien on the goods - in that clear title could not pass to the SME owner without payment of the purchase price for the goods. The procuring entity was interested in ultimately receiving clear title to these goods, so this procuring entity stood as an additional advocate of payment to Kountable, as intermediate supplier of the goods. This simply to ensure clear title could be conveyed.
- The 'Commercial' nature of the transaction further changed the nature of the rights of the financing entity, Kountable, from one of financial participant in the transaction, to one of title holder and previous owner of goods. Thus, in a traditional bank-lending structure, the remedies available to the financing party are those of creditor - and those rights as lender, with respect to the procurement transaction and the goods themselves, derive indirectly from the agreement with the SME owner. Whereas, in the *Murabaha*-based structure, the claim over the goods and the follow-on sale to the procuring entity are derived from the ownership claim established as the intermediate purchaser of the goods. In the *Murabaha* structure, failure to pay for the goods is a criminal offense, not just a dispute about debt.
- In the present *Murabaha* structure, there appears to be better alignment of the motivations and interests of all transaction participants, than is normally seen in a bank-lending structure. In this case, the procuring entity has greater alignment with the financing entity (as previous owner and title-holder of the goods), in ensuring that title to the goods involved can transfer cleanly.
- In the *Murabaha* structure where title transfers through the financing entity, the 'foreign-collateral' concerns held by the local banking entities are replaced by actual title (via the intermediate purchaser, Kountable). This suggests that transactions that do involve foreign collateral can be converted to a more attractive structure by including the commercial aspects of the present financing scheme.
- The SME owners anecdotally indicated that they were attracted to this financing structure because it eliminated their need to provide 'additional collateral' to the banks to serve as security for their loans. Instead, the current transaction structure placed a premium on the *execution capability* of the SME entrepreneur, over the traditional measure of credit-worthiness, as measured by the banks. This emphasis on the skills and abilities with respect to completion of procurement tasks was expressed as a welcome relief for many of the transaction participants.

#### IV. CONCLUSION AND DISCUSSION

The implications of this broad acceptance of this *Murabaha* financing structure, as outlined herein, suggest

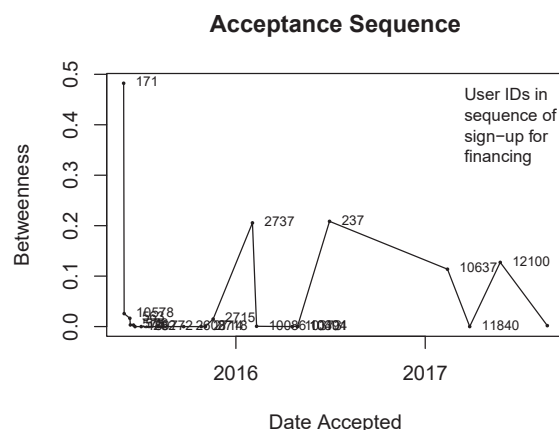


Fig. 2 Sign-Up Order in Network

that financial structures that have typically been promoted as *Islamic-finance*, may very likely be subject to broader market acceptance than normally considered. In the case of the financings discussed in this paper, the acceptance of the *Murabaha* structure by these entrepreneurs had little, if any, relationship to the religious implications of the structure. Rather, purely market-driven forces compelled this non-religious population to willfully choose the offered structure over other traditional banking-based lending structures.

This strongly suggests that there is much broader application for the financing structures that have historically been promoted as *Islamic finance*. Indeed, the *Murabaha* structure that was the present subject, has traditionally been marketed as a religious choice instead of simply a market-based choice.

It is the conclusion of this author that the market should expect broader application of Islamic finance principles in a non-religious context.

#### A. Further Social-Network Discussion

It is, perhaps, very interesting to consider the sequence of acceptance of this financing structure, based upon the social-network structure existing among this group of SME entrepreneurs. Fig. 2 illustrates the first date of acceptance of this structure by each SME owner plotted against the relative betweenness centrality of that SME owner within the social network described in Fig. 1, above.

In this Fig. 2, it can be seen that the most central user, *uid* = 171 was the first to accept this financing structure. That initial acceptance was followed by several *low centrality* or *peripheral* parties in the network. It was several months before then next highly-central user, *uid* = 2737, accepted. This, too, was followed by multiple peripheral parties in the network. Finally, other highly central users (*uid* = 237, 10637 and 12100) joined in the acceptance of this novel financing structure. The actual ordering of the individual entrepreneurs, with respect to their acceptance of the financing structure, is represented in Fig. 1, where the label for the vertices representing these 22 SME owners is preceded with the symbol # followed by that entrepreneur's ordinal position in accepting the structure.

This follows very clearly along the principles of 'group conformity' suggested by McCulloh [7], in that conformity begins at the periphery of a social network, rather than at the core. In this case, after the lead by the most central member of the network, it was the peripheral participants that were most eager to follow. The more central players in the network lagged significantly in the acceptance of this new *norm* appearing within the group (i.e., the acceptance of this novel - to them -financing structure). The later parties to accept this transaction structure were those other, highly central, social network actors.

This study provides support for McCulloh's brief report on social conformity. It provides evidence, in this very different setting, that conformity to social norms might proceed according to the he has identified.

#### ACKNOWLEDGMENT

The author would like to thank Kountable Inc. for its generous support of this research and for providing the data associated with this paper.

#### REFERENCES

- [1] M. Ayub, *Understanding Islamic Finance*. Hoboken, NJ: John Wiley & Sons, 2007.
- [2] P. J. Carrington, J. Scott, and S. Wasserman, Eds., *Models and methods in social network analysis*. Cambridge; New York: Cambridge University Press, 2005.
- [3] A. U. Dowla, *How Entrepreneurs use Social Networks in their Business*, Masters Thesis. Swedish University of Agricultural Sciences, Uppsala, Sweden, 2011.
- [4] M. A. El-Gamal, *Islamic Finance: Law, Economics, and Practice*. New York, New York: Cambridge University Press, 2006.
- [5] Z. Iqbal and A. Mirakhor, *An Introduction to Islamic Finance, Theory and Practice*. Singapore: John Wiley & Sons (Asia) Pre Ltd, 2007.
- [6] I. Light and L.-P. Dana, "Boundaries of Social Capital in Entrepreneurship." *Entrepreneurship Theory & Practice*, pp. 122, Jan. 2013.
- [7] I. McCulloh, "Social Conformity in Networks," *Connections*, vol. 33, no. 1, pp. 3542, Jul. 2013.
- [8] S. Wasserman and K. Faust, *Social network analysis: methods and applications*. Cambridge; New York: Cambridge University Press, 1994.



**Craig M. Allen, Ph.D.** is a retired professor of finance from Brigham Young University - Hawaii. He is currently C.F.O. of Kountable Inc. a tech start-up based in San Francisco, CA that provides a technology platform for Murabaha-based trade finance to SME owners in developing markets. Dr. Allen has had a 30 year history of structured finance work and trade-based financing. He began his New York finance career at Bear Stearns & Co. in 1987, has been instrumental in multiple start-ups, has taken one company public (ACAR),

has completed over USD \$8bb in structured transactions in his Delphi companies and currently serves on the board of the Viking Asset Securitisation Ltd. commercial-paper conduit companies.