RISK AVERSION AND ISLAMIC FINANCE: AN EXPERIMENTAL APPROACH

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ABSTRACT

This article examines the effect of investor’s risk aversion on his choice between conventional contract and Islamic contract. The authors focused on the choice of profit loss sharing (PLS) contracts, and to what extent other factors affect choice, such as experience, religion and political factors. Lab experiment approach was applied to test the role of risk aversion, along with other factors, in affecting investor’s choice. The paper concluded that neither Islamic religion views nor risk behavior affect the choice of people with no experience in borrowing. However, inexperienced investors are affected by both political-religious orientation and risk behavior. Such finding, contradicts with the widely held belief that Islamic bank transactions are more suitable for risk-lover depositors and risk-averse borrowers. Furthermore, the paper’s results call for more unique and innovative Banks’ marketing strategies specially designed for the pre-experienced investors.

Key words: Islamic finance, risk aversion, conventional credit, profit loss sharing (PLS), behavioral finance, Lab experimental Islamic banks.

1. INTRODUCTION:

Islamic financial institutions are relatively recent creations: one of the first Islamic banks was set up in Egypt in 1963. Although the origin of modern Islamic banking was in Egypt, it probably would not have developed as an important financial force without the strong support of Saudi investors. The Islamic Development Bank (IDB) was established in 1975 and gave momentum to the Islamic banking movement. It was the first time in modern Muslim history that an international financial institution committed itself to conduct its activities in conformity with the Shari’ah. Instead of working on the basis of interest, the bank was authorized to levy a service fee to cover its administrative expenses. Since the creation of the IDB, a number of Islamic banking institutions have been established all over the world and some countries have taken the necessary steps to organize their banking systems along Islamic lines. The first private Islamic commercial bank, the Dubai Islamic Bank, was founded in 1975.

Although Islamic finance is relatively new in some countries like the United States, but it is widely
practiced in other countries. In Egypt, Indonesia, Malaysia, Sudan, and the Gulf States, Islamic banking coexists with conventional banking. In many cases, international banks have established Islamic finance windows, or branches of their bank that specifically offer Islamic finance products and services. In countries such as Iran and Pakistan, Islamic banks are the only type of financial institution. Islamic finance is also offered in Europe by a small number of conventional banks and through the recently established Islamic Bank of Britain.

The Islamic financial system differs significantly from conventional interest-based lending system. The main difference is that the latter system applies either a fixed interest rate or a simple linear function of some other benchmark rate, while the Islamic system shares profit and losses of investment output between the creditor and the borrower. In this way, the Islamic system replaces the interest-bearing contracts\(^1\) by a return-bearing contract, which often takes the form of a partnership.

On the other hand, both Islamic and conventional contracts differ in the inherited level of risk that lies on the borrower side. Based on individual rationality that implies utility maximization, the borrower’s choice between these contracts should depend on his risk aversion type. Portfolio theory defines risk aversion as the ability of an investor to bear (accept) risk. The aggressive investor (risk-lover) will prefer risky contracts, while the conservative investor (risk-averse) will choose less risky contracts.

Islamic financial contracting encourages long-term relationships between banks and their clients. However, it needs high level of monitoring and follow-up from the bank side, in order to reduce the borrower moral hazard. By such way, Islamic contracts offer something akin to equity financing rather than debt financing.

There are different types of financial contracts that are compatible with the basis of Islamic Shari‘ah, which are Musharaka (partnership), Mudaraba (financing by way of trust), Murabaha (cost-plus financing), Ijara (leasing), Salam (advance purchase), Bai bi-thaminajil, Istisnaa (commissioned manufacture), Sukuk (participation securities).

The new emerging literature in behavioral economics has shown some evidence that individuals can have different actions in responding to different frames. Where the social, cognitive and emotional factors may affect individual economic decisions and hence would highlight the idea of bounded rationality of economic agents.

Consequently, many questions would arise; Do investors really behave regularly in a rational way?! Is risk aversion the only factor that determines investor choice among different credit contracts? Or are there other factors that would drive the investor away from the rational choice?

This paper tries to investigate the effect of investor's risk aversion on his choice between conventional contracts and Islamic contracts, and to what extent the other factors affect this choice. These factors may include the experience of an investor, his religion, educational level, financial transactions, and political preferences. Whereby, the determination of such factors would help in constructing the investor’s indifference map for expected return versus risk.

The results of this study would give advice to banks and other financial institutions regarding the suitable and efficient marketing strategies for their various financial contracts/instruments according to different types of clients.

**MAIN RESEARCH QUESTIONS:**

- How would risk aversion affect investor choice of credit contract?
- Are people appearing to be rational when choosing credit contract?
- Is there a role for credit experience in affecting individual credit choice?
- Does religion have a role to play in contract choice?
- Are financial institutions aware of factors affecting borrowers’ choices among contracts?

\(^1\)Based on the prohibition of fixed interest (Riba) in Shari‘ah.
In order to tackle the above stated inquiries, the researchers followed logical thinking based on economic theory and reached an assumption for this study:

- Profit – Loss- Sharing (PLS)\(^2\) contracts divide the risk between the borrower (client) and the lender (bank).
- Conventional contracts (with fixed interest rates) burden the borrower with the whole risk.
- Therefore, we can conclude that PLS contracts are less risky than conventional contracts for the borrower.
- Consequently, that would mean that the rational borrower would choose:
  o The PLS contract if he is a risk averse person.
  o The conventional contract if he is a risk lover person.

In order to answer the above stated questions, this study applied a methodology based on a lab experiment approach, conducted on 110 Egyptian individuals, along with an individual questionnaire, to test the role of risk aversion, along with other factors, in affecting investor choice between conventional contracts and Islamic contracts (PLS).

The next part of the study covers the differences between conventional and Islamic finance, risk aversion and contract choice, other factors affecting contract choice; Emotional factors in determining bank contract choice, applied study, and the conclusion.

**2- DIFFERENCES BETWEEN CONVENTIONAL AND ISLAMIC FINANCE**

Although Islamic finance is relatively new to some countries like the United States, various interpretations of this concept are widely practiced in other countries. In Egypt, Indonesia, Malaysia, Sudan, and the Gulf States, Islamic banking coexists with conventional banking. In many cases, international banks have established Islamic finance windows, or branches of their bank that specifically offer Islamic finance products and services. In countries such as Iran and KSA, Islamic banks are the only type of financial institution. Islamic finance is also offered in Europe by a number of conventional banks and through the recently established Islamic Banks.

Islamic finance is finance under Islamic law (or Shari’ah) principles. The basic sources of Shari’ah are the Qur’an and the Sunna, which are followed by the consensus of the jurists and interpreters of Islamic law.

One of the fundamental principles governing Islamic financing is that the receipt of fixed interest is prohibited. This is categorically stated in the Qur'an: "Those who devour Riba (fixed interest) will not stand except as stands one whom the devil hath driven to madness by (his) touch” (II:275)

In an investment environment, Riba is interpreted as any return on money that is predetermined in amount and therefore includes modern day interest-based financing\(^3\). Islamic principles allow instead for the replacement of interest by a return that is dependent upon the profitability of the underlying investment.

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**Basic Principles of Islamic Finance**

- **Prohibition of (Riba').** Riba – a term literally “an excess” and interpreted as “any unjustifiable increase of capital whether in loans or sales”.
- **Money as “potential” capital.** Money is not a commodity, but a medium of exchange, a store value and a unit of measurement. Money represents purchasing power and cannot be utilized to increase the purchasing power without any productive activity. Islamic finance advocates the creation of wealth through trade and commerce.
- **Risk sharing.** Because interest is prohibited, suppliers of funds become investors, rather than creditors.
- **Prohibition of speculative behavior.** Islamic finance discourages hoarding and prohibits transactions featuring extreme uncertainties (gharar), and gambling (maysir).
- **Sanctity of contracts.** Islamic finance upholds contractual obligations and the disclosure of

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\(^2\) Type of Islamic contracts based on partnership.

\(^3\) To be exact, Riba is defined, in regard to financial transactions, as any contractual increment in a loan or debt due to the time element. This is exactly that we know today as interest.
Accordingly, Islamic finance is fundamentally different from the conventional finance model as it is based on (PLS), which requires that a financial institution invest in a client in order to finance their needs, rather than lending money to the client. Because of the inherent risk involved in an investment, the financial institution is entitled to profit from the financial transaction. In assuring clients that the structure of the advertised Islamic finance products are compliant with Islamic law, financial institutions employ a panel of Islamic scholars, also known as a Shari’ah board, to analyze and approve of the product’s compliance with Shari’ah, or Islamic law. If the Shari’ah board approves of the product, it signs a certificate called a “fatwa” designating the product as “Shari’ah compliant”, which also serves to assure customers of the product’s adherence to Islamic law.

Generally, we can define the Islamic bank as a non-interest based financial institution which complies fully with Islamic laws. More specifically, Islamic banks can be explained as financial intermediaries that mobilize resources in the direction of projects approved by the Islamic law (the Shari’ah), using Islamic financing instruments. They also mobilize deposits and produce loans based on Islamic law (Shari’ah), which are different from the other conventional or commercial banks [14].

A fundamental distinction of an Islamic Bank is the lack of deposit insurance common in conventional banks. The PLS structure permits receipt of money by depositors where deposits invested have incurred a profit, but they must incur losses in situations where deposit investments incur losses to comply with Shari’ah. Deposit insurance defeats the purpose of PLS because the depositor does not incur any risk.

One of the cornerstones of Islamic banking is the prohibition of Riba and the application of trading and commerce (al-bay’). Whereby, the pre-determined rate of return does not exist, while the conventional banks operations are mainly driven by fixed interest [4]. The Islamic financial system, instead, proposes equity participation and risk sharing on the part of banks and debtors [32].

As the operations of Islamic banks are based on strict Shari’ah guidelines, the purpose of Shari’ah is to protect the interest of the public, one of which is the protection of property. Unlike conventional banks, the purpose of Islamic banks is to work in harmony with the Islamic law and principles towards economic development.

The most widely used Shari’ah-compliant credit contracts are; Murabaha (cost-plus sales), Bay’ bithamanajil (credit sales), Ijarah (Leasing), Mudarabah and Musharakah (partnership), Salam and Istisna (Islamic forwards), Qard e-Hasan [6].

2.1: Murabaha (cost plus sales)

This type of Islamic contract is one of the most widely used modes of financing by the Islamic banks. This instrument is being used for financing of consumer durables, real estate and in the industry for purchasing raw materials, machinery or equipment. However it is most common and popular use is in short-term trade financing.

Murabaha can be considered the Islamic version of regular consumer loans of conventional banks. It is a signed contract between the bank and the purchaser, but there are three parties involved: the seller of the good to the bank, the buyer (bank’s debtor) who could be an ordinary consumer, factory owner or a trader, and the bank which acts as an intermediary ‘‘trader’’ and facilitator between the buyer and the seller.

The Murabaha sale contract between the bank and the purchaser (debtor) is based on the prior promise to purchase contract signed initially between the same two parties. Under that contract the bank purchases the goods desired by the purchaser from the seller and sells to the purchaser on his “promise to purchase” at a price which includes the cost of the purchase plus a pre-agreed profit, thus this is a cost

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4 For more details about the prohibition of riba refer to [18].
plus sale contract. Murabaha contracts have flexible repayment terms and competitive pricing. It was narrated that 'Ibn Mas'ud ruled that there was no harm in declared lump-sum or percentage profit margins. Thus, one may approach an Islamic financial institution and say “purchase this item on my behalf at this price, and I shall give you a profit margin of $10”. Notice that in this contract, the Islamic bank or financial institution must own the item at the time the customer buys it from them with the specified profit margin [6].

2.2: Bay’ “bi-thamanajil” (credit sales)

The cost plus profit (Murabaha) contract is hardly ever executed on spot through immediate payments by the purchaser. The financial intermediary can only be played by the bank if the loan payments are through installments or in other words the bank is extending credit.

This is exactly what happens in the actual practice of Islamic banking in which the more common and usual mode of payment for goods, machinery or equipment is deferred payments through installments. These deferred payments at a higher price than the cost price (incurred by the bank) is not considered as Riba, (Hanafi masterpiece) said: “the price may be increased based on deferment”, and in Al-Quran “but Allah has permitted trade and forbidden Riba” [6].

2.3: Ijara (leasing contract):

Legally, the lease contract is not a sale of the object, but rather a sale of the usufruct (the right to use the object) for a specified period of time. The sale of usufruct is permissible in Islam.

The most important financial difference between Islamic permitted leasing and conventional financial leasing is that the leasing agency must own the leased object for the duration of the lease. Then, unlike traditional banking where the bank allows the customer (buyer) to lease goods at fixed interest rates, the Islamic leasing facility has two subcontracts. First, the bank signs a purchasing contract with the seller for the commodity which the buyer wishes to lease. The bank pays the seller and then gets the commodity delivered to the buyer. Second, the bank signs a lease contract with the buyer in which commodity is leased to the customer allowing him the ownership (or simply the use) of the asset after payment of lease installments and residual charges. The lease option is commonly used for transactions in real estate, cars, computers, machinery and equipment.

2.4: Musharaka and Mudaraba (partnership):

2.4.1: Musharaka

The Musharaka involves a partnership between two parties who both provide capital towards the financing of new or established projects. Both parties share the profits on a pre-agreed ratio, allowing managerial skills to be remunerated, with losses being shared on the basis of equity participation. One or both parties can undertake management of the project.

2.4.2: Mudaraba

The Mudaraba is a profit sharing contract, with one party providing 100 per cent of the capital and the other party (the mudarib) providing its expertise to invest the capital, manage the investment project and, if appropriate, provide labor.

Profits generated are distributed according to a predetermined ratio, but like the capital itself, cannot be guaranteed. Losses accrued are therefore borne by the provider of capital, who has no control over the management of the project. Mudaraba structures are often used for investment funds, with investors providing money to the Islamic bank, which it invests as mudarib, taking a management fee.

This is also like a partnership contract except that in this there is no equity partnership but only PLS. The Mudaraba contract is reflected in the balance sheet of the bank on both the asset and the liability side. On the liability side it is an unrestricted Mudaraba in which the depositors agree that the bank is free to choose the investments that it will make with their deposit money and agree to share the profits earned by the bank. On the asset side it is a restricted Mudaraba contract because the bank agrees to finance a particular (restricted) investment need of the customer and to share a percentage of the project’s associated profits.

2.5: Salam and Istisna (Islamic forwards):

2.5.1: Salam
Salam is a sale of a commodity whose delivery will be in a future date for a cash price, which means, it is a financial transaction in which price is paid in cash in advance to the seller, who abides to deliver a certain commodity on a definite due date. The bank benefits from entering into a Salam contract with a seller because usually a Salam purchase by the bank is cheaper than a cash purchase. Due to this reason the bank is secured against price fluctuations, such as price deflation or market crashes, when post-Salam prices could dip lower than currently contracted Salam sale prices.

2.5.2: Istisna
The principle of gharar prevents one from selling something that one does not own. The technique of Istisna’a has been developed as an exception to this. As defined by the Islamic Development Bank, Istisna’a is a contract whereby a party undertakes to produce a specific thing that is possible to be made according to certain agreed specifications at a determined price and for a fixed date of delivery.

Accordingly, the technique is particularly useful in providing an Islamic element in the construction phase of a project, as it is akin to a fixed price turnkey contract. As the Istisna’a contract is one of procurement and sale of an asset, it also lends itself to non-recourse financing.

In an Istisna’a transaction, a financier may undertake to manufacture an asset and sell it on receipt of monetary installments. As banks do not normally carry out manufacturing, a parallel contract structure will typically be used. The ultimate buyer of the asset will commission it from the bank, which will institute a parallel contract under which the bank commissions the asset from the manufacturer. The bank charges the buyer the price it pays the manufacturer plus a reasonable profit, the bank therefore takes the risk of manufacture of the asset.

2.6: Qard-e-Hasan (benevolent or interest-free loan):
Islamic banks provide this type of loan on a limited scale to poor sections of society such as needy students or small rural farmers. Such loans would have negative NPVs (Net Present Value) for the banks. Traditional banks do not have any benevolent loan structures.

3- RISK AVERSION AND THE CONTRACT CHOICE:
How does a rational individual make the choice between Islamic and conventional contracts? Every choice generates return, but is also associated with risk. Every rational borrower wants to maximize the returns for a given level of risk.

The choice between conventional and Islamic contracts is one that involves weighing of risk and return. Under an Islamic banking framework, in case of depositing, fixed interest payments (Riba) are avoided, and substituted by sharing profit and loss. While Islamic banks do not pay interest, they pay a rate of return to depositors on their savings. Islamic banks periodically declare a return on deposits, based on the profits actually earned on investments financed by their PLS deposits. Because banks could theoretically make losses, thus depositors’ principal as well as return are both at risk under the PLS system [32].

But in case of borrowing, the risk-return analysis will be completely different, by applying PLS, the Islamic bank will share the loss with borrower under some types of contracts like Musharaka. While borrower under conventional contracts will be exposed to high level of risk, as he/she pays the interest (Riba) whether he/she makes profits or not without sharing any losses with the conventional bank.

That raises a question of whether rational individuals, depositors and borrowers, will prefer to deal with Islamic banks or not? There are several factors affecting the choice between Islamic and conventional contracts.

The main factor is risk-aversion which we will discuss in this section while other factors will be discussed in the coming sections. To consider risk and return behavior, we have to go through the Portfolio theory that defined risk aversion as the ability of an individual to accept or bear risk. There are three degrees of risk aversion, risk-averse, risk-lover and risk-neutral individual [25].

- Risk- averse investor: Giving a choice between two assets with equal rates of return, an investor will select the asset with lower level of risk.
- **Risk-lover (seeking) investor**: Giving a choice between two assets with equal rates of return, an investor will select the asset with higher level of risk.

- **Risk neutral investor**: Giving a choice between two assets with equal rates of return, the investor is indifferent to select any of them.

Figure 1: Investor Indifference Curve

Figure (1) shows different indifference curves for several types of investors. The uppermost (left) curve is this of a risk-averse investor, showing that higher returns are required for investors who are more risk averse. The lower (right) curve is that of a risk lover.

The choice of the most adequate portfolio by an investor depends on this investor’s preferences of risk and return, manifested in the investor indifference curve. The investor indifference curve portrays the relationship between the risk related to an investment/portfolio and its expected return, the former on the horizontal axis and the latter on the vertical axis. As standard economic theory explains, for a rational investor, every indifference curve holds an infinite number of risk-return combinations that are different yet equally desirable. Also, the higher the indifference curve, the more desirable it is. Since the indifference curve shows the amount of certainty (lack of risk) that an investor is willing to sacrifice for additional return, this changes with different investors according to their intrinsic risk-return preferences. This can be shown by giving two examples of investors: the risk-averse investor and the risk-lover. As shown in Figure 1, the indifference curve of the risk-averse investor is steep, as it means that in order for this investor to accept additional risk, he must be given a large return on the investment. The risk-lover's indifference curve, however, is flat-shaped. It reflects this investor’s willingness to accept a big amount of additional risk for a relatively small additional return [3].

Portfolio theory developed by Harry Markowitz discusses how assets and liabilities of a rational individual are considered by him, and how they should be managed in order to attain the highest possible return. A portfolio includes all of an individual’s assets and liabilities. Portfolio theory’s main assumption is that individuals are risk-averse, meaning that given a choice between two assets with equal rates of return, most individuals will select the asset with the lower level of risk. An example of the risk-averse behavior: people purchase insurance for life, automobile, or health. When they buy insurance, this implies that you are willing to pay for the current known cost of the insurance policy to avoid the uncertainty of a potentially larger outlay in the future.

Risk-averse behavior of an individual affects his strategy of managing his portfolio in both assets and liabilities side. In managing assets of portfolio, when an individual acts as depositor or investor, he will prefer to deposit his money in conventional banks, or any other investment yield fixed return like bonds, to avoid the volatility of return. But in managing liabilities of portfolio, when an individual acts as creditor, he will prefer to borrow under PLS contracts from Islamic banks, to share profits and loss with the bank, which minimizes the risk of his portfolio.

Then, Islamic bank transactions are more suitable for risk-lover or aggressive depositors, but on the contrary, it is more suitable for risk-averse or conservative borrowers. Because PLS helps the borrower to share risk with Islamic Bank, for example Musharaka.

Harry Markowitz was the one that developed the basic portfolio model. The model indicates the importance of diversifying investments to reduce the
total risk of a portfolio, but also shows how to effectively diversify. According to the model, “a single asset or portfolio of assets, is considered to be efficient if no other asset or portfolio of assets offers higher expected return with the same (or lower) risk, or lower risk with the same (or higher) expected return”.

Moreover, the risk in a portfolio of assets is than the risk in holding any single one of the individual stocks. As an example, if a portfolio contains two assets, one that pays off when it rains and another that pays off when it doesn't rain, then it is a portfolio that will always pay off regardless of whether it rains or not. Adding one risky asset to another can reduce the overall risk of an all-weather portfolio. In other words, Markowitz showed that investment is not just about picking stocks, but about choosing the right combination of stocks. Finally, a rational individual will only hold a portfolio that is efficient, meaning that is a portfolio that gives the maximum expected return for a given level of risk.

Regardless of the level of risk aversion, when an individual makes choice between conventional and Islamic contracts, he may diversify his choices by accepting both Islamic contracts and conventional contracts in the same time to minimize risk.

4- OTHER FACTORS AFFECTING CONTRACT CHOICE:

What determines investment and credit choice between conventional and Islamic banking? In a country where the majority of the population is Muslims and where both Islamic as well as conventional banks operate, what are the main factors that motivate customers to deal with either an Islamic bank or a conventional bank, or both? In explaining consumer behavior, it is assumed that consumers choose the goods and services with the highest value, or those able to provide the highest satisfaction. The factors determining consumer behavior in making choices for goods and services are different for every individual, as well as the utility derived from this consumption.

In modern economics, when studying the problem of choice it is assumed to be dependent on individual behavior, with rarely considering the role of the societal norms in that choice [16]. One may need to consider the Muslim consumer and investor in a slightly different light, as the problem of choice is also related to the purpose of human life in Islam, which is to look for the rewards and favors of Allah [11] and in alliance of a main principle of Islam which is justice.

We consider the literature in the area of consumer choice towards patronizing Islamic banking as opposed to conventional banking. The first question the literature asks is how important the role of religion is in choosing Islamic banking. In a study on customers of two leading Islamic banks in Bahrain, concluded that the most important factor behind preferring Islamic banks is following Islamic principles [19]. Another study found that for the age group of 31-40 years, compliance with Islam is the first priority factor for choosing between banking systems [24]. Other research conducted a study examining customer satisfaction of Islamic banking in Malaysia and concluded that among six different variables (compliance, assurance, reliability, tangibles, empathy and responsiveness) compliance to Islamic principles is the most important factor in customers choosing Islamic banks [23]. However, the story remains incomplete if the focus is kept this narrow. On the other end of the spectrum, we had a view by finding that religion did not play any significant role to select an Islamic bank in Jordan [7].

However, many studies adopted the view that customers in Islamic banks seriously consider compliance to Shari‘ah rules in the banking activities; however they also found that this is not the only reason, and perhaps not even the primary reason, behind choosing Islamic banking [19]; [20]; [9]; [10]; [24]. In the literature, we find that factors such as economic, societal, and quality factors have a major role to play in this issue. One study did find evidence that [19], in addition to the main religious motivation, consumers’ decisions are also influenced by factors of profit, family, friends, and even bank location [15]. They also found that the second important factor was rate of return from Profit and Loss Sharing (PLS) [4]. One research has found that bank reputation, perception that Islamic banking applies, Islamic principles, ability of bank to handle secrecy, and profit, all act as the motivating factors in consumer choice [20]. Based on studying 52 different branches of Islamic banks in Malaysia, some studies found the selection choice to be a function of a combination of Islamic principles, financial reputation, and quality of services offered [20]; [5].
According to their definition, quality of service includes proper customer treatment, trust and confidence in the staff, as well as effective and efficient handling of transactions [4]. It was revealed that bank's name, reputation, and image are very important criteria for the customer’s bank selection In [34]. Indeed, consistent to all the aforementioned studies, a study on Malaysian customer preferences found positive and significant relationships between each of customer perception of service quality, social perspective, religious perspective, availability of services with choice of Islamic banking [23]. In addition, a study concluded that although most customers adopt Islamic banking because of religious reasons, other factors that motivate customers to patronize the Islamic banking system are efficiency, confidentiality, and working hours of banks [15]. Another study also confirmed that incompetence and lack of courtesy of Islamic bank personnel was the main reason customers averted from Islamic finance [1]. Further on the issue of the role of economic factors, a study considered the relation between the market interest rate in conventional banks and the amount of deposits in Islamic banks; found this to be a negative relationship, where the increase in interest rates in conventional banks decreases the amount of deposits in Islamic banks. Also, they found a positive relation between return and amount of deposits in Islamic banks [10], whereas return in Islamic banks increases, so do deposits. This is what was referred to as the 'profit motive' [7]. In this regard, where the decision to choose Islamic banking is decided upon an economic cost/benefit analysis, the macroeconomic conditions have a big role in this decision.

A study about business behavior, has found factors (other than religion) that customer’s bank choice, they were: the degree of risk sharing relative to business risk, the cost of borrowing funds from other lenders (interest rate), and the expected rate of return from Profit Loss Sharing [24]. In addition, Jalaluddin actually found that though most decision-makers in the firms of his study were non-Muslim, 60 percent of the respondents expressed that they are interested to use the profit-loss sharing method of finance as opposed to conventional methods of debt finance, mainly because the cost of such finance from regular banks can be prohibitive to conducting business. These results align perfectly with simple economic principles [12].

A rather important aspect to consider is the issue of awareness and knowledge about Islamic banking principles and services, and its relation to choosing Islamic banks and using its financial products. Several studies came to the conclusion that most customers had little knowledge about products such as Mudarabah and Murabaha, but most of them did not use these products [22]; [20]. Another study considered business attitudes towards Islamic banking products and services, and found that the dominant factors were the economic factors and not the religious ones, such as profitability. And they clarify that the reason may be due to the fact that the majority of their respondents were non-Muslim, and they were unaware of the existence of substitute products by Islamic finance for conventional banking products, and even Muslim respondents had little knowledge about Islamic finance. And conventional bank customers are willing to patronize Islamic banks if they had sufficient knowledge of Islamic banking practices. In addition to customers avoiding the Islamic banking system altogether, lack of awareness can even affect those who decide to use Islamic banks in the type of products they use [10]. Moreover, it was found that many Islamic bank account holders prefer to hold savings and current accounts instead of other accounts such as Mudarabah and Ijara financing, and the reason is that despite the people knowing about Islamic banking they have no knowledge about the specific Islamic financial products [4].

5. EMOTIONAL FACTORS IN DETERMINING BANK CONTRACT CHOICE:

When considering the factors behind people choosing a certain type of investment, not only do society, beliefs, and economics decide this, there is a rather important and interesting aspect to look at which is the role of emotions in economic decision-making. Standard economic models have always minimized or ignored the role of emotions in influencing individual decisions, as they have always considered the decision-maker as perfectly rational. In recent years, this assumption has been challenged greatly by both psychologists and behavioral economists. One study has applied an economic game (Ultimatum game) to find out the role of emotions in decision making. In the game, one person is the Proposer and
the other is the Responder, where the former is given a sum of money and has the opportunity to split it with the other player, and the latter can either accept or reject the money proposed. The rational economic decision for the responder would be to accept any sum of money presented to him, and for the proposer to offer the smallest sum possible [27]. This is where behavioral economics makes a breakthrough. The results show that regardless of the sum of money at hand, the offers by proposers are typically around 50% which raises lots of questions about rationality and standard economic solutions. Also, and more interestingly, low offers have about a 50% chance to be rejected by the responder. After studying such robust experimental findings, it has appeared that “low offers are often rejected due to angry reactions to offers perceived as unfair, and the negative emotions provoked by unfair treatment in Ultimatum Games can lead people to sometimes sacrifice considerable financial gain to punish their partner. As for the proposer, the feeling of responsibility towards society, and others’ wellbeing, as well as giving importance of how society will look at a person who refuses to share, or even your own conscience in this regard, affects their final decision to split the monetary amount. People’s bargaining behavior is powerful colored by emotions such as anger, fear, and embarrassment [17]. These sort of existing anomalies are what led to the proposition of behavioral finance as an alternative to the efficient market hypothesis that has dominated finance for many years [31].

The outlook on finance has brought two sides of it into an academic and experimental debate. On the one hand there is traditional finance that has developed in a normative sense, focusing on how investors should behave, and completely overlooking how they actually behave. On the other hand, behavioral finance examines how real people actually behave in a financial setting, thereby considered a descriptive type of study. Behavioral finance applies psychology to financial behavior, focusing on the notion that people may not always be rational, but will always be human [33]. Thus, behavioral finance shows the irrationality of investors in competitive markets. Another research says that “investors’ deviations from the maxims of economic rationality turn out to be highly pervasive and systematic” [31].

We now turn to look at the types of psychological biases that affect investor decisions, and lead to that unexpected results by traditional finance models. First, the brain can fall into the representativeness bias which is making judgments based on stereotypes. This bias causes investors to buy stocks that represent desirable qualities such as those of a good well known company, thereby confusing a good company with a good investment [28]. Second, filtering out memories and failing to remember past mistakes and learning from them leads to cognitive dissonance. This is when people tend to ignore, reject, or minimize any information that conflicts with a particular belief [2].

In our case of the choice between Islamic and conventional finance, the decision can really be distorted because of such biases. People are not only following religious obligations, or comparing returns, but adhering to what their natural understandings and assumptions tell them are good decisions, simply because the brain is filtering out some of the information that challenges their beliefs, insisting that theirs was the correct decision and the proper opinion.

In an interesting study proving that investors may remember their part performance better than it actually was measured the recollections of investors; where two questions were asked to investors regarding the return on their investments of the previous year was. Without any cognitive biases, responses of recollection of performance should align with actual performance, but what is found is that one group recalled an investment performance 6.22% higher than it actually was, and another 3.4%. People want to believe their investment decisions are good. Third, people often prefer things that have some familiarity to them, hence the familiarity bias. For example it is proven that social influences of the media and the surrounding environment of friends, family, and colleagues affect investment decisions. In fact, social interaction and investment are strongly related where people in a peer group tend to develop the same tastes, interests, and desire to live similar lifestyles, as well as develop social norms for what are the preferred beliefs of the group [8]. One can draw a relation here to how people in a Muslim community may have the tendency to choose Islamic banking because it is what their peers are choosing. Then there is a fourth type of psychological bias relevant to mood and optimism bias, as it greatly affects how investors analyze and make judgments about the market. Good moods lead to more
optimistic judgments than bad moods, as being in a bad mood makes the investor more critical in analyzing whereas people in good moods tend to use less information processing and buy stock without conducting proper analysis [21]. This is a direct reflection of how emotions can hamper good investment decisions. The disposition effect results from the emotions of pride and regret, leading people to want to feel good about themselves, and making the decisions that help serve this purpose. A study showed that avoiding regret and seeking pride do have effect on investor decisions. In this sense, the disposition effect can be the trigger to choosing Islamic banking, where the Muslim investor does not want to regret following the Islamic principles of finance, or where he takes pride in following them, opting for a non-conventional source of return that is in conformity with Allah’s Shari’ah [29].

Behavior is influenced by cultural, social, personality, and psychological factors. A question is now posed on the notion of perfect/complete rationality. “To say that people base their actions on thought does not necessarily mean they are always rational”. Rationality may be impaired due to reasoning skills which are not always well developed or used effectively. Or they may be well developed but based on incomplete information. Alternatively, due to factors like the surrounding environment or psychological biases or emotions, the person can fail to consider the full consequences of different choices misread events and act on their misconceptions. The choices and decisions may appear rational to them, in their subjective perspective [21]. Hence, the notion of bounded rationality has to be considered in financial behavioral studies.

6-THE APPLIED STUDY:

This section will presents the experimental design showing the steps and procedures of the experiment conduction followed by the results, and finally a part for analysis and discussion of results will be presented.

6-1: Experiment design and conduction:

For the underlying study Table (1) shows that researchers have prepared and used three tools throughout three rounds in order to answer the research questions:

<table>
<thead>
<tr>
<th>Table 1 Experiment Design</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Round (1)</strong></td>
</tr>
<tr>
<td>Action</td>
</tr>
<tr>
<td>Domain</td>
</tr>
<tr>
<td>Tool</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Rounds:

Round (1): The experiment started by an investigation round on the subjects’ characteristics including their risk aversion identification and other demographic, political and religious orientation.

Round (2): Both groups G(1) and G(2) were exposed to (offered) the first treatment, which is the C-Contract. The output from each group (dependent variable) was an individual accept/reject answer for the Conventional loan offer.

Round (3): Both groups G(1) and G(2) were exposed to (offered) the second treatment, which is the PLS-Contract. The output from each group (dependent variable) was an individual accept/reject answer for the PLS loan offer.

○ The Experiment field (subjects):

The experiment has used 110 subjects randomly chosen from Cairo University; some of them are students others are employees and some of their relatives. For that we used a randomized CRD experiment.

○ Tools:

- A questionnaire sheet was designed with 28 questions\(^5\), forming three main parts: demographic data, religious dimension and intellectual views and individual risk behavior.
- Two credit contracts were designed:
  - C-Contract: based on fixed interest rate, and offered from a conventional bank.

\(^5\) The questionnaire was designed and applied in Arabic, then translated into English language (Annex 1).
- **PLS-contract:** based on sharing profits and losses, and offered from an Islamic Bank.

- **SPSS statistical package** was used to process the raw data from the three rounds.

**6-2: Conducting the experiment:**

**Round (1):** The experiment started by an investigation round on all the subjects’, filling in the pre-designed questionnaire form, some notes were taken from responders at this stage. Demographic information was known by filling twelve questions, we could get some evidence about the religious dimension & intellectual view for each subject through his answer to five questions. In order to quantify the individual risk we let him/her respond to eight questions that were designed to measure his/her risk manner scale.

**Round (2):** Two groups were identified according to the responder’s borrowing history, each subject in each group was exposed to (offered) the first treatment, which is the Conventional -Contract

**Round (3):** Both groups G(1) and G(2) subjects were exposed to (offered) the second treatment, which is the PLS-Contract

**6-3: Statistical analysis procedures and results:**

The authors in this section of statistical analysis have applied the following procedures that were used to answer the research questions:

- **a) Stage of data entry and processing:**
  The researcher reviewed the data to ensure completeness and validity of data entry and statistical analysis, and then discharged using the computerized Statistical Package for Social Sciences (SPSS).

- **b) The stage of descriptive statistics:**
  The researchers extracted the descriptive statistics for the research, and dealt with descriptive statistics frequencies, percentages, averages, Mean, standard deviation, Confection of variation and arrangement Ranking.

- **c) The Stage of answering research hypotheses:**
  At this stage, the authors could answer the research hypotheses based on:

  - Cross tabulation (Chi-Square) relationship between the subject’s response to the each of the credit offers and all of the independent variables
  - Logistic regression for the effect of risk aversion and religious orientation on subject’s response to credit offer.
  - Mann Whitney test-different than independent Sample (control-conventional)

**THE AUTHORS HAVE REACHED THE FOLLOWING STATISTICAL RESULTS:**

In order to check the reliability and validity, we used coefficient Alpha Cronbach, to measure the stability of the content variables of the study. The coefficient has reached (0.6201) indicating high degree of persistence of the study sample, which is reflected on validity (self-honesty) as it reaches (0.787)^6.

Several outputs were induced from conducting Round (1):

- **Understanding the demographic characteristics of the 110 experiment subjects.**
  The experiment subjects have just gender representation of 48.2% males and 51.8% females, accounts for Christians by 16.4%^7, and all age categories are well presented in the experiment^8. University education signifies the highest category of education status among the subjects with 56.4%, however, all other educational statuses were represented^9. The employment subjects are 77.3% of the whole subjects.

- **Identifying the individual religious dimension of the subjects.**
  The statistics showed that 32.7% is convinced with the Islamic political parties^10. Moreover, 78 percentages of the 110 subjects pray regularly, and 49% read or listen to the Holy Book on regular basis. That indicates a religious behavior among the experiment field.

- **Computing the individual risk index for the 110 experiment subjects.**
  Answers for questions 20 to 27 in the questionnaire^11 about individual risk manners were designed in the form of five categories weighted average according to the criteria for approval and

---

^6 Refer to Annex (2).
^7 This is very close to the same percentage in the Egyptian population.
^8 Refer to Annex (2).
^9 Refer to Annex (2).
^11 Refer to Annex (1).
disapproval in the following Likert scale\(^{12}\) in order to indicate the direction and strength of risk behavior based on Table (2) criteria.

**Table 2 Risk Scale for measuring individual risk index**

<table>
<thead>
<tr>
<th>Scale</th>
<th>Interval</th>
<th>Individual Risk indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.79</td>
<td>Strongly negative</td>
<td>Strongly disagree= highest risk averse</td>
</tr>
<tr>
<td>1.80-2.59</td>
<td>Negative</td>
<td>Disagree= risk averse</td>
</tr>
<tr>
<td>2.60-3.29</td>
<td>Neutral</td>
<td>Neutral</td>
</tr>
<tr>
<td>3.30-4.19</td>
<td>Positive</td>
<td>Agree= risky</td>
</tr>
<tr>
<td>4.20-5</td>
<td>Strongly Positive</td>
<td>Strongly agree= risk lover</td>
</tr>
</tbody>
</table>

the following table (3) shows statistics of subject's risk manners, indicated by their strength of approval/rejection to the questionnaire statements. The table illustrates the highest approval and least degrees of approval in response to vocabulary questions (20-27), and then shows for each axis the general trend of the responses of search terms. Looking at the percentage coefficient of variation and (equivalence follows =standard deviation ÷ mean × 100).

\(^{12}\) Frequency tables for those risk questions are shown in Annex (2)
### Table 3 Descriptive statistics for risk manners - Questions (20-27)

<table>
<thead>
<tr>
<th>question</th>
<th>Strongly agree</th>
<th>agree</th>
<th>Neutral</th>
<th>disagree</th>
<th>Strongly disagreed</th>
<th>Mean</th>
<th>St. d.</th>
<th>c.v</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>20. Do you agree to work in a job where all your salary depends on commission</td>
<td>2</td>
<td>1.8</td>
<td>7</td>
<td>6.4</td>
<td>18</td>
<td>16.4</td>
<td>50</td>
<td>45.5</td>
<td>33</td>
</tr>
<tr>
<td>21. you have visited a restaurant that offers 20% discount on a new meal that you didn’t try before. Would you try this meal?</td>
<td>6</td>
<td>5.5</td>
<td>42</td>
<td>38.2</td>
<td>27</td>
<td>24.5</td>
<td>21</td>
<td>19.1</td>
<td>14</td>
</tr>
<tr>
<td>22. If the interest rate on bank deposits is 10%, and you own 100,000 pounds. One of your friends offered you a share in one of investment projects that generates 20% return. Do you agree to participate in that project</td>
<td>5</td>
<td>4.5</td>
<td>33</td>
<td>30</td>
<td>28</td>
<td>25.5</td>
<td>34</td>
<td>30.9</td>
<td>10</td>
</tr>
<tr>
<td>23. your friend is buying a car and wants you to guarantee him. Do you agree</td>
<td>4</td>
<td>3.6</td>
<td>23</td>
<td>20.9</td>
<td>36</td>
<td>32.7</td>
<td>10</td>
<td>9.1</td>
<td>37</td>
</tr>
<tr>
<td>24. your friend is buying a car and wants you to guarantee him. Do you agree</td>
<td>11</td>
<td>10</td>
<td>34</td>
<td>30.9</td>
<td>23</td>
<td>20.9</td>
<td>27</td>
<td>24.5</td>
<td>15</td>
</tr>
<tr>
<td>25. Somebody that you do not know has stopped you on the highway asking for help, would you stop to help him</td>
<td>8</td>
<td>7.3</td>
<td>19</td>
<td>17.3</td>
<td>25</td>
<td>22.7</td>
<td>32</td>
<td>29.1</td>
<td>26</td>
</tr>
</tbody>
</table>
26. Coupon withdrawal on a BMW car that worth half a million pounds, the price of each coupon is 1500 pounds and the coupon is non-refundable. Would you buy such coupon?

27. A friend has offered you a share in one of his projects

Mean average

<table>
<thead>
<tr>
<th>Groups</th>
<th># subjects</th>
<th>Identification</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>G-1= control</td>
<td>64</td>
<td>Didn’t apply for credit pre-experiment</td>
<td>No individual credit experience</td>
</tr>
<tr>
<td>G-2= conventional</td>
<td>46</td>
<td>Applied for credit pre-experiment</td>
<td>Individual credit experience exists</td>
</tr>
</tbody>
</table>

The trends in vocabulary research experiment had shown a general trend of the "Neutral" on the means axis of risk manners. (Mean-Average) capacity (2.528), coefficient of variation (%24.33), and differences in variance’s ability (%75.67), according to the responses of the sample, that would indicate that individual do not care about level of risk content when they are taking a decision.

Classifying the subjects into two groups as follows in table (4):

Table 4 Experimental Design

<table>
<thead>
<tr>
<th>Groups</th>
<th># subjects</th>
<th>Identification</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>G-1= control</td>
<td>64</td>
<td>Didn’t apply for credit pre-experiment</td>
<td>No individual credit experience</td>
</tr>
<tr>
<td>G-2= conventional</td>
<td>46</td>
<td>Applied for credit pre-experiment</td>
<td>Individual credit experience exists</td>
</tr>
</tbody>
</table>

The researchers started to investigate each group separately; Muslims appeared to have the higher percentage in both groups without any significant difference. There is significant age difference between groups, Group -2 (who has experienced credit before) includes high percentage from older individuals especially between 30 and 40 years, compared to G-1 that includes the highest percentage from youth between 18 and 30 years. This could be justified by the nature of the (18-30 years) age group in the Middle East countries, as they are usually financed from their families. Therefore, they will rarely take the decision of taking any bank loan.

There is no significant different between two groups (Control- Convention) according to "Education" while value (Z) equal (1.595) to the abstract P-value level more than (0.05).

As for employment status, significant difference appeared in favor of more employment in G-2. This could be due to several reasons; most of G-1 subjects are between 18 and 30 years, many of them may be still studying or did not find a job, especially with limited job opportunities in Egypt. As for G-2, higher employment percentage could be referred partially to the role of the loan they took before easing their employment condition, or to other individual

---

14 Refer to Annex (2-3)
15 Refer to Annex (2-4)
16 We would expect low risk level for this age interval.
17 Refer to Annex (2-6)
characteristics and behavior related to personal intrepid.

When each subject was asked about political party that convinced his/her vision, most of respondents of G-1\(^{18}\) (42.2\%) were not interested or not convinced with any party; only 26.6\% based their political choice on religious foundation. As for G-2\(^{19}\), most of subjects (41.3\%) based their political choices on religious basis. Although no significant difference concluded between G-1 and G-2, while \(z=1.363\) to the abstract \(P\)-value more than (0.5)\(^{20}\). Figure 2 shows the average variable the party that you are convinced with its ideas.

Regarding the risk behavior, and by using the results of eight Likert scale questions, no significant difference between two the groups was noticed, while value \((Z)\) equal (1.218) to the abstract \(P\)-value level more than (0.05). Table (5) summarizes the comparison between G-1 and G-2.

Table 5 Diff. between G1 & G2 in main independent variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>No sig.diff. G1 &amp; G2</th>
<th>sig.diff. G1 &amp; G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender= Q1</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Religion= Q2</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Age= Q 3</td>
<td></td>
<td>√</td>
</tr>
</tbody>
</table>

Based on risk similarities between G-1 and G-2, we would expect no differences in individual response to the same credit offer, i.e. we might expect same behavior based on same risk index.

**Round (2):** Both groups G(1) and G(2) were exposed to (offered) the first treatment, which is the C-Contract
- The output from each group (dependent variable) is an individual accept/reject answer for the Conventional loan offer.

The statistical results showed that 93\% of G-2 subjects, who have experienced conventional bank credit before, rejected the loan offer. For G-1 subjects, who have not any experience, 85\% rejected the loan. The Figure (3) shows the average subject’s response to the conventional credit offer.

Such results showed a general rejection trend for conventional contract among both groups, without any significant differences between both groups, which indicates no role for former credit experience in affecting individual decision making in this regard, this means that the similarities between G-1 and G-2, overcome the differences in affecting the subjects’ decision making in both groups.

\(^{18}\) Where, the majority are youth.

\(^{19}\) Where, the majority are conservative.

\(^{20}\) Refer to Annex (2-8)
No risk differences → no difference in response to conventional contract.

Experience differences → no difference in response to conventional contract.

Conclusion: Experience does not affect conventional loan choice

**Round (3):** Both groups were exposed to (offered) the second treatment, which is the PLS-Contract

- The output from each group (dependent variable) is an individual accept/reject answer for the PLS loan offer.

The statistical results showed that 37% of G-2 subjects, who have experienced conventional bank credit before, rejected the loan offer. For G-1 subjects, who have not any experience, 50% rejected the loan.

Figure (4) shows the average subject’s decision when he was offered a PLS- Islamic offer.

![Figure 4: What will be your reaction?](image)

No risk differences → no difference in response to PLS contract.

Experience differences → no difference in response to conventional contract.

Conclusion: Experience does not affect PLS loan choice

Such outcome shows a moderate acceptance trend for the PLS-Islamic contract in both groups, without any significant differences between both groups, which again indicates no role for former credit experience in affecting individual decision making in this regard.

That would enforce the results of round (1); where similarities between both groups (Gender, Religion, Educational Status, Islamic political choice and Risk index21) weights more than the other variable (Age, employment and experience) in affecting the contract approval decision.

**By looking to both Round (1) and Round (2) results, the following is worth noting in table (6):**

<table>
<thead>
<tr>
<th></th>
<th>Accepting Conventional contract (round 1)</th>
<th>Accepting PLS-Islamic contract (round 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>G-1</td>
<td>14.1%</td>
<td>50%</td>
</tr>
<tr>
<td>G-2</td>
<td>6.5%</td>
<td>63%</td>
</tr>
</tbody>
</table>

The above cross statistics table (6) shows that the acceptance percentages for both groups have increased when they have been offered a PLS-Islamic contract in round (2), compared to conventional contract in round (1). This could be explained based on the relation between individual experience and type of offered contract. That higher acceptance percentage of PLS by G-2, may indicate bad borrowing experience from conventional banks.

Accordingly, the researchers moved to a forward step in order to address other dimensions of the study objectives; PLS-Islamic contract in particular.

**The logistic regression model based on all rounds' results:**

There are many important research topics for which the dependent variable is a "limited" or categorical response variable. Logistic regression is useful to predict the presence or absence of a characteristic or outcome based on values of a set of predictor variables. It is similar to a linear regression model, but it suits models where the dependent variable is dichotomous. Logistic regression coefficients can be used to estimate odds ratios for each of the independent variables in the model.

21 Table (5).
We applied "Stepwise Logistic Regression Model" to determine the impact of:

- Having Islamic political views
- Individual Risk Index

On subject’s decision whether to accept/reject the PLS-Islamic contract in our experiment. This was applied on each of the two groups (G-1 and G-2). Applying the stepwise logistic model on G-2 did not produce any significant reliable results, indicating that neither Islamic religion views nor risk affect the choice of people with pre-experience in borrowing. On the other hand, the following table (7) shows the results for G-1:

Table 7 Stepwise Logistic Regression Model on G-1

<table>
<thead>
<tr>
<th>No</th>
<th>Independent Variables</th>
<th>Estimated coefficient</th>
<th>Wald test</th>
<th>Chi-square test</th>
<th>R2</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>value</td>
<td>value</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>constant</td>
<td>-0.968</td>
<td>4.655</td>
<td>0.03*</td>
<td>12.006</td>
<td>0.007**</td>
</tr>
<tr>
<td>2</td>
<td>X20_27</td>
<td>1.327</td>
<td>3.627</td>
<td>0.057*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Q13int</td>
<td>7.503</td>
<td>0.023*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Q13int(1) religion</td>
<td>1.979</td>
<td>7.485</td>
<td>0.006**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Q13int(2) any not interested</td>
<td>0.586</td>
<td>0.864</td>
<td>0.353</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Percentage correct = 68.8%. * Parameter is significant at (.0.05) level. ** Parameter is significant at (.001) level.

The above table ensures that the model is fitted to logistic regression, which means that the overall independent variables have statistically significant impact on subject’s decision, since the value of "chi square test" is (12.006) at (0.001) significance level. Indicating that both Islamic religion views and risk affect the choice of people with no experience in borrowing.

As for the coefficient of determination, the independent variables accepted in the model explain (23%) of the total variation in the Logit model, the remaining percentage is due to either the random error in the regression model or other independent variables excluded from the regression model. Larger pseudo r-square statistics indicate that more of the variation is explained by the model, to a maximum of 1.

We used Wald statistic, in order to determine the significance of each variable’s coefficient in the logistic regression model. The results in the above table (7) show the significance of risk index and Q13int, specially “religious based orientation” category, at less than (0.05) level.

The Probability event of each independent variable shows the importance of the independent variables in affecting the individual response to PLS-Islamic offer, the above table (7) indicates that the political-religious orientation of the subject has the most important effect with probability of (0.88), the individual risk index comes in the second importance with probability equals (0.79).

That means that political-religious orientation has more influence than risk behavior in individual’s decision regarding PLS-Islamic credit offer and that

---

23 The ratio of B to S.E., squared. If the Wald statistic is significant (i.e., less than 0.05) then the parameter is useful to the model.
24 the odds ratio divided by Odds ratio plus one,
would find an answer to the main question of our study

For G-2, with experience in conventional credit, the overall logistic regression model appeared to be statistically insignificant by using "Model Chi-Square", which means that the independent variables included (even risk-index or political-Islamic orientation) cannot explain the individual response to the PLS-Islamic offer. We can explain this result with a wider look analyzing the logistic regression results of both group. Once again, we should refer to the diversions between the two groups in order to explain the difference in the result.

Apparently, the main difference is the experience in using credit, namely conventional credit. It seems that people who have taken loans before will not be affected, in their decision, by their risk behavior index nor by their religious orientation, especially when 93% of them reject the conventional offer as well.

That indicates that the problem is not with the offer content but with the idea of borrowing again and repeating the experience. People may prefer financing their needs from other resources like borrowing from friends and family and making a "social cashbox" based on social capital; such attitude was raised and noted by some of the responders while conducting the questionnaire.

Finally, we can state the Logistic Regression model as follows:

\[
P(Y) = \frac{1}{1 + e^{-(0.968+1.327 \text{risk-index}+1.979 \text{Q13risk2) } +0.586 \text{Q13risk2})}}
\]

By substituting the values of independent variables, the Islamic bank can then predict the individual response to the offer of a PLS-Islamic credit contracts.

7. CONCLUDING REMARKS:

This paper tried to investigate the effect of investor's risk aversion on his/her choice between conventional contracts and Islamic contracts, and to what extent the other factors affect this choice, trying to give advice to bank and other financial institutions regarding the suitable and efficient marketing strategies for their various financial contracts according to the clients' preferences.

Each choice between Islamic and conventional contracts generates return, but is also associated with risk, and every rational individual should maximize the returns for a given level of risk. The study tried to combine the portfolio theory that introduced the risk aversion analysis with characteristics of both conventional and Islamic contracts to end that, Risk-averse behavior of an individual affect his strategy of managing his portfolio in assets side and liability side. In managing assets of portfolio, when an individual acts as depositor or investor, he will prefer to deposit his money in conventional banks, or any other investment yield fixed return like bonds, to avoid the volatility of return. But in managing liabilities of portfolio, when an individual acts as creditor, he will prefer to borrow under PLS contracts from Islamic banks, to share profits and loss with the bank, which minimizes the risk of his portfolio.

Then, Islamic bank transactions are more suitable for risk-lover depositors, but on the contrary, it is more suitable for risk-averse borrowers. Because PLS helps the borrower to share risk with Islamic Bank, for example Musharaka.

The paper tackled the experience aspect and concluded that borrowing experience does not affect PLS or conventional contract choice.

Albeit, the paper discovered a role of experience in affecting the relation between contract choice and each of: risk behavior and Islamic orientation views. The results showed that neither Islamic religion views nor risk affect the contract choice (PLS/conventional) of people with pre-experience in borrowing. However, both Islamic religion views and risk behavior affect the choice of people with no experience in borrowing.

On the other hand, the paper focused on PLS contract choice, and concluded that the decision to choose PLS by inexperienced responders is affected by both

\[25\] Widely applied in Egypt.
political-religious orientation and risk behavior, though the political-religious orientation has more influence than risk behavior. That conclusion answers the main question of our study. However, contradicts with a study by (Erol and Radi, 1989) that did not find any significant effect of religion in selecting Islamic bank in Jordan [7].

However, the PLS contract choice by experienced responders found to be not affected by neither their risk behavior index nor by their religious orientation, where more important factors would affect their choice. Such results may worth referring us to the ideas of bad experience and the stereotypes that subjects have made in their minds due to their previous experiences. Individuals can fall into the representativeness bias mentioned in [28], which causes them to make judgments based on pre-determined stereotypes, whether good (good company reputation) or bad (bad past experiences). This bias can truly limit the investment decision to a certain past experience and drive it away from a rational risk-return assessment. Moreover, as mentioned previously, psychological biases and a role for emotions both affect investors’ decisions. As mentioned in Shefrin and Statman (1995), avoiding regret does have an effect on investor decisions (the disposition effect), and individuals that already have disappointing investment experiences would not want to risk making the same mistake twice. Those experienced people may give more weight for other factors related to the bank’s services and location26. Therefore, those individuals are harder to be attracted.

These results calls for banks - especially Islamic – to be keen on supplying unique and innovative banking products and services for people with experience, in order to erase any bad experience they had before. For that, dynamic market analysis and field studies should be conducted in order to get the individuals’ feedback and use to improve the bank services and products in a demand driven dynamic way.

The results mentioned above regarding people’s preferences of service and quality on top of religious principles, as well as lack of proper awareness, has serious implications for what is needed in terms of marketing strategies. A heavy emphasis needs to be placed on the development of marketing and information programs to go hand in hand with the introduction of new institutions, products, and services. Islamic banks are in need of awareness campaigns. Bank managements need to go the extra mile to create awareness among customers, and their marketing campaigns need to facilitate the understanding of Islamic banking products and services, in order to convince customers to patronize [4]. In addition, Islamic banks need to address the needs of their customers, or of banking customers in general. A study concluded that Islamic banks must not rely solely on religious factors as a strategy to secure customers. They must emphasize on providing quality and efficient services on order to win those customers and compete with conventional banks. Areas of focus should be convenience, cost-benefit, core-banking services, and confidence [5]. Another study mentioned that along with religious background, customers want a good use of their investment which means they want the best cost-benefit trade-off, convenient bank locations, faster transaction processing, competitive fees on products and services, and caring employees [24]. These features need to be developed, and the marketing strategy needs to highly promote them. Marketing strategies should also focus on strong human interaction between banking staff and customers and not just strong campaigns, as (Lorience, 2003) suggests if the banks want to have the best competition, then they have to attract and satisfy their customers with direct interaction from a highly trained and professional staff. It is worth underlining that the strategies need to be customer-focused and oriented, where the bank needs to be perceived to be ethically Islamic, fostering trust and customer loyalty.

In a competitive market, when banks start to offer more or less similar products, it is the customer perception of a bank and its reputation that will determine its competitiveness and success, which is why any bank should aim at gaining their customers’ loyalty.

8. REFERENCES:


26 The study did not account for these variables. However, such factors could be the core of a future research.
in selecting Islamic financing products. In International Islamic Banking Conference, Prato, Italy.


Annex (1): Questionnaire Form

Form number ( )

<table>
<thead>
<tr>
<th>Have you taken a Bank Credit before?</th>
<th>Yes ( )</th>
<th>No ( )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Islamic Bank ( ) or Conventional Bank ( )</td>
<td></td>
</tr>
</tbody>
</table>

First: Demographic data:

(1) Sex:
1 – Male
2 – Female

(2) Religion
1 – Muslim
2 – Christian

(3) Age
1 - 18 - 30 years old
2 - 30 - 40 years
3 - 40 - 50 years
4 - 50 - 60 years
5 - 60 years and older
(4) residential area ………………
(5) Educational Status
1 - illiterate
2 – below secondary
3 - Secondary Education / Diploma / Medium Education
4 – university education
5 - postgraduate (MSc - PhD)
(6) Employment status
1 - employed 2 - unemployed 3 - on pension
(7) employment sector
1 - government 2 - Private Sector 3 - entrepreneur
4 –free craftsman 5 - Service workers, vendors
(8) Have you ever borrowed?
1 – Yes 2 - No (go to question 13)
(9) size of the loan
1 - less than 10,000 pounds 2 - 10,000 - 20,000 pounds
3 - 20,000 - 30,000 pounds 4 - more than 30,000 pounds
(10) Type of loan
1 – Loan with interest rate 2 - Islamic loan (go to question 12)
(11) interest rate
1 - less than 9% 2-10% to less than 13% from 3 - 13% or more
(12) repayment period
1 - less than one year 2 -one year to 3 years
3- 3 years to 5 years, 4- 5 years and longer

Second: the religious dimension & intellectual view:

(13) What is the party that you are convinced with its ideas?
1 - Liberty & justice/the Light/The Middle
2 –Other party
3 - not convinced with any/not interested
(14) Who was your candidate in the Egyptian presidential elections 2012?
1 - Aboul-Ezz Al Hareery 2 - Mohamed Isaa 3 - Hossam Khairahhla
4 - Amr Moussa 5 -Abul Fotouh 6 - Hisham El Bastawisi
7 - Mahmoud Hossam 8 - Muhammad Salim Al-Awa 9 - Ahmed Shafik
10 - Hamdeen Sabahi 11 - Abdullah ElAshaal 12 – Khalid Aly
13 - Mohamed Morsy

(15) With respect to your religion: you pray:
1 – regularly    2 - sometimes    3 - rarely

(16) With respect to the Koran (Muslims) & the Bible (for Christians): you read or listen to it:
1 - regularly    2 – sometimes    3 - rarely

(17) What do think is the best way of keeping your savings? :
1 -In Islamic bank    2 –In commercial bank    3- other...

(18) Do you have savings?
1 – Yes    2 - No (go to question 20)

19) What is the form of those savings
1 - short-term bank deposit    2 – Investment certificate
3 – saving account book    4 - stock market    5 - other (...........)

**Third: individual Risk index:**
(20) Do you agree to work in a job where all your salary depends on commission?

1 - Strongly agree    2 – agree    3 – Neutral    4 - disagree    5 - strongly disagree

**The following are set of attitudes that you may face in your daily life, and I want to know your reaction:**
(21) you have visited a restaurant that offers 20% discount on a new meal that you didn’t try before. Would you try this meal?
1 - Strongly agree    2 - agree    3 - Neutral    4 – disagree    5 - strongly disagree

(22) If the interest rate on bank deposits is 10% , and you own 100,000 pounds. One of your friends offered you a share in one of investment projects that generates 20% return. Do you agree to participate in that project?
1 - Strongly agree    2 – agree    3 - Neutral    4 – disagree    5 - strongly disagree

(23) your friend is buying a car and wants you to guarantee him . Do you agree?
1 - Strongly agree    2 – agree    3 - Agree, but with a formal paper that grantees my legal situation    4 – hesitated    5 -disagree

(24) Do you agree going with your friends to a desert camp for a few days?
1 - Strongly agree    2 – agree    3 – Neutral    4 – disagree    5 - strongly disagree

(25) Somebody that you do not know has stopped you on the highway asking for help, would you stop to help him?
1 - Strongly agree    2 – agree    3 - Neutral    4 – disagree    5 - strongly disagree

(26) Coupon withdrawal on a BMW car that worth half a million pounds, the price of each coupon is 1500 pounds and the coupon is non-refundable. Would you buy such coupon?
1 - Strongly agree    2 - agree    3 - Neutral    4 – disagree    5 - strongly disagree
(27) If you have 100,000 pounds, and you want to invest them. One of your friends - that you trust - works as a business-man, has offered you a share in one of his projects.

Which project will you choose from the following alternatives, bearing in mind that the greater the return the higher the risk:

1 - project (b): return monthly 26,600 pounds .. with 19% probability of loss.
2 – project (a): Monthly return on 13,200 pounds .. with 11% probability of loss.
3 – I am indifferent.
4 – I am hesitated.
5 – I reject both.

(28) Have you ever participated in demonstrations to demand for social or political rights?
1 – Yes 2 - No

Annex (2)

Table (2-1)

Reliability & Validity for Risk aversion & Islamic finance

The Cronbach alpha coefficient

<table>
<thead>
<tr>
<th>Diminution</th>
<th>Reliability</th>
<th>Validity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk aversion &amp; Islamic finance</td>
<td>6201.</td>
<td>787.</td>
</tr>
</tbody>
</table>

Table (2-2)

Demographic variables Frequency distribution

<table>
<thead>
<tr>
<th>ser</th>
<th>Items</th>
<th>Frequency</th>
<th>Percent</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Male</td>
<td>53</td>
<td>48.2</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Female</td>
<td>57</td>
<td>51.8</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>110</td>
<td>100</td>
<td>-</td>
</tr>
</tbody>
</table>

5. Educational Status
<table>
<thead>
<tr>
<th></th>
<th>Illiterate</th>
<th>below secondary</th>
<th>Secondary Education</th>
<th>university education</th>
<th>postgraduate (MSc - PhD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8</td>
<td>7.3</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>2.7</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>16</td>
<td>14.5</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>62</td>
<td>56.6</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>21</td>
<td>19.1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>110</strong></td>
<td><strong>100</strong></td>
<td><strong>-</strong></td>
<td></td>
<td></td>
</tr>
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</table>

7. Employment sector

<table>
<thead>
<tr>
<th></th>
<th>Government</th>
<th>Private Sector</th>
<th>Entrepreneur</th>
<th>Service workers, vendors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>48</td>
<td>53.3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>26</td>
<td>28.9</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>13</td>
<td>14.4</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>3.3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>90</strong></td>
<td><strong>100</strong></td>
<td><strong>-</strong></td>
<td></td>
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</tbody>
</table>

Table (2-3)

“Religion” Frequency distribution

<table>
<thead>
<tr>
<th>Ser</th>
<th>Items</th>
<th>Control</th>
<th>Conventional</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Frequency</td>
<td>percent</td>
</tr>
<tr>
<td>1</td>
<td>Muslim</td>
<td>52</td>
<td>81.3</td>
</tr>
<tr>
<td>2</td>
<td>Christian</td>
<td>12</td>
<td>18.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>64</strong></td>
<td><strong>100</strong></td>
<td><strong>46</strong></td>
</tr>
</tbody>
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\[ Z = 0.794 \]

\[ .42 = P-value \]

Table (2-4)

“Age” Frequency distribution
<table>
<thead>
<tr>
<th>Ser</th>
<th>Items</th>
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<th>Conventional</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Frequency</td>
<td>percent</td>
<td>Frequency</td>
<td>percent</td>
</tr>
<tr>
<td>1</td>
<td>18 - 30 years</td>
<td>31</td>
<td>48.4</td>
<td>1</td>
<td>2.2</td>
</tr>
<tr>
<td>2</td>
<td>30 - 40 years</td>
<td>21</td>
<td>32.8</td>
<td>18</td>
<td>39.1</td>
</tr>
<tr>
<td>3</td>
<td>40 - 50 years</td>
<td>6</td>
<td>9.4</td>
<td>15</td>
<td>32.6</td>
</tr>
<tr>
<td>4</td>
<td>50 - 60 years</td>
<td>4</td>
<td>6.3</td>
<td>11</td>
<td>23.9</td>
</tr>
<tr>
<td>5</td>
<td>60 years and older</td>
<td>2</td>
<td>3.1</td>
<td>1</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>64</td>
<td>100</td>
<td>46</td>
<td>100</td>
</tr>
</tbody>
</table>

\[ Z = 5.294 \]

.001** = P-value

Table (2-5)

Man–Whitney test for risk behavior

<table>
<thead>
<tr>
<th>Ser</th>
<th>Items</th>
<th>Control</th>
<th></th>
<th>Conventional</th>
<th></th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>N=64</td>
<td></td>
<td>N=46</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mean rank</td>
<td>58.63</td>
<td>Mean rank</td>
<td>51.14</td>
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</tbody>
</table>

\[ Z = 1.218 \]

.22 = P-value

Table (2-6)

“Employment status” Frequency distribution

<table>
<thead>
<tr>
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<th>Items</th>
<th>Control</th>
<th></th>
<th>Conventional</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Frequency</td>
<td>percent</td>
<td>Frequency</td>
<td>percent</td>
</tr>
<tr>
<td>1</td>
<td>Employed</td>
<td>44</td>
<td>68.8</td>
<td>41</td>
<td>89.1</td>
</tr>
<tr>
<td>2</td>
<td>unemployed</td>
<td>18</td>
<td>28.1</td>
<td>2</td>
<td>4.3</td>
</tr>
</tbody>
</table>
### Table (2-7)

**Man–Whitney test for risk behavior**

<table>
<thead>
<tr>
<th>Ser</th>
<th>Items</th>
<th>Control N=64</th>
<th>Conventional N=46</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean rank</td>
<td>Mean rank</td>
</tr>
<tr>
<td>1</td>
<td>On pension</td>
<td>58.63</td>
<td>51.14</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>3,1</td>
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<tr>
<td>3</td>
<td>6.5</td>
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<td></td>
<td>Total</td>
<td>64</td>
<td>46</td>
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<tr>
<td></td>
<td></td>
<td>100</td>
<td>100</td>
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</table>

\[ Z = 2.284 \]

\[ .02^* = \text{P-value} \]

### Table (2-8)

**Frequency distribution of the variable:**

"The party that you are convinced with its ideas"

<table>
<thead>
<tr>
<th>ser</th>
<th>Items</th>
<th>Control</th>
<th>Conventional</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Frequency</td>
<td>percent</td>
</tr>
<tr>
<td>1</td>
<td>Religion</td>
<td>17</td>
<td>26.6</td>
</tr>
<tr>
<td>2</td>
<td>Other</td>
<td>20</td>
<td>31.3</td>
</tr>
<tr>
<td>3</td>
<td>Not convinced with any, not interested</td>
<td>27</td>
<td>42.2</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>64</td>
<td>100</td>
</tr>
</tbody>
</table>

\[ Z = 1.363 \]

\[ .17 = \text{P-value} \]
### Table (2-9)

**Frequency distribution of the variable:**

"If you have offered a conventional bank credit"

<table>
<thead>
<tr>
<th>ser</th>
<th>Items</th>
<th>Control</th>
<th>Conventional</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Frequency</td>
<td>percent</td>
</tr>
<tr>
<td>1</td>
<td>I reject the loan</td>
<td>55</td>
<td>85.9</td>
</tr>
<tr>
<td>2</td>
<td>I agree on the loan</td>
<td>9</td>
<td>14.1</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>64</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

\[ Z = 1.246 \]

\[ .21 = P\text{-value} \]

### Table (2-10)

**Frequency distribution of the variable”**

"If you have offered an Islamic form of finance”

<table>
<thead>
<tr>
<th>ser</th>
<th>Items</th>
<th>Control</th>
<th>Conventional</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Frequency</td>
<td>percent</td>
</tr>
<tr>
<td>1</td>
<td>I reject the loan</td>
<td>32</td>
<td>50</td>
</tr>
<tr>
<td>2</td>
<td>I agree on the loan</td>
<td>32</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>64</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

\[ Z = 1.351 \]

\[ .17 = P\text{-value} \]