

Religiosity scale development

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Abstract

Purpose – The purpose of this paper is to develop an Islamic religiosity measurement which can be applied in many various sectors and fields.

Design/methodology/approach – The religiosity measurement developed by the authors had undergone systematic qualitative and quantitative approaches taking into consideration the expert opinion survey in ensuring the measurement content validity and reliability.

Findings – The study found that Islamic religiosity measurement is multi-dimensional. The dimensions found were beliefs and commitment or practice.

Research limitations/implications – The research limitation of the study is that the research is in its exploratory stages and needs to be replicated and to be tested in different contextual settings.

Originality/value – The instrument was developed through a rigorous systematic database search, qualitative and quantitative scale development stages which can be used as the basis in measuring Islamic religiosity.

Keywords Religiosity, Islamic finance, Islamic financial services marketing, Islamic banking, Religion

Paper type Conceptual paper

1. Introduction

The major contribution of this paper is the methodological development of Islamic religiosity scale measurement. Even though, the scale is developed as part of a bigger research in evaluating customer satisfaction in the Islamic banking industry, the researchers believe that it can also be applied in other contexts in Islamic marketing in its original form or with some modifications. The introduction of the Islamic religiosity scale is timely and appropriate, as religion is a part of the application of values to consumer behavioural research in many countries, which are highly populated with Muslims. This research defines religion “as a complete way of life, the way of thinking, ideology and way of actions that is not confined to beliefs and ritual only”. The definition is looking at religion in total. It will include all aspects such as political, economic, social, law and governance. Specifically, the study’s definition can be applied to Islam as Gleason (1997) quoted in Gunn (2003) states that:

Muslim believers stress that Islam is not only a religious doctrine but also a way of life. Islam does not make distinctions between doctrine and life, between thought and action, between word and deed. Islam demands total commitment of the individual since it is a living doctrine.



Religiosity is normally left aside in determining consumer behaviours even though in many parts of the world religions do affect consumers' behaviours (Wilkes *et al.*, 1986; Delener 1990; Delener 1994; McDaniel and Burnett 1990; Mokhlis and Safiek 2006) and attitudes (Hosein 1997; Weaver and Agle 2002) through a set of rules and regulations (Weaver and Agle 2002). It is also used as an explanatory variable to account for differences in the consumption habits of consumers in different parts of the globe (Moschis and Ong 2011). It will depend on an individual commitment to adhere or not to adhere or comply or not to comply to/with the rules and regulations. Worthington (1988; 2003) added an important element in committing to the rules and regulations. He added that the individual has to use the religious values, beliefs or practice daily. This implies that religiosity requires consistent adherence to the rules and regulations in daily practice. One must have faith in religious value and beliefs (guided by rules and regulations) as well as put them into practice. As the studies with religion as a theme stems from different vast areas such as sociology, psychology, economic, religion and marketing, it would be practical for the study to use a systematic database search focussing on consumer behaviour. In this paper, the researchers reviewed the academic literature systematically and followed it by a three stages development process of Islamic religiosity measurement.

2. Literature review

There is an abundance of religiosity measurement instruments in the literature in the area of psychology (Hill and Pargament 2003; Gorsuch 1984), macroeconomics (Rehman and Askari 2010), sociology (Glock 1972), business ethics (Vitell *et al.*, 2009; Vitell *et al.*, 2001; Vitell *et al.*, 2007; Babakus *et al.*, 2004; Conroy and Emerson 2004; Bettina *et al.*, 2005; De Bock and Van Kenhove 2010) and marketing, which aimed to measure to what extent each individual adopts a religious belief in his or her life (Choi 2010; Choi *et al.*, 2010). However, religiosity in consumer behaviour is under research (Andrew and Lindridge 2005; Cleveland and Chang 2009). Religiosity is an important component because consumers' behaviours can be predicted by their commitment to adhere to the rules and regulations of their own religion (Moschis and Ong 2011). Nevertheless, the consumers' level of commitment might be different from one individual to another based on their education background, age and ethnicity (McDaniel and Burnett 1991; Assadi 2003). This implies that the degree of commitment or observance on the sets of laws and regulations of the religions varies across individuals. Therefore, conservative believers would vary from the liberal believers in adhering or following such rules and regulations, which affect consumptions and the level of cognition and behaviour in individual purchasing decisions. For instance, sociologists have found seven types of taxonomy of religious individuals such as the outsiders, the conservatives, the rejectors, the modern religious, the marginally religious, the orthodox and the culturally religious (Filsinger *et al.*, 1979). However, religiosity levels are also viewed as a continuum in psychology from low to highly religious (Reber *et al.*, 2009). This becomes a premium for the religious consumers because normally religious institutions use it to their advantage charging the religious consumers a price for their insurance against uncertainty – life after death (Assadi 2003). These findings support the earlier studies conducted by Allport on religiosity that distinguishes between the conservative and liberal believers (Allport 1966). The consumers can be highly committed, moderately committed or less committed to the principles of their religion, or they can be not committed at all. To complicate matters, there are also a group of consumers who chooses not to believe in any religion and chooses to be free from any commitment to God. They are called the free thinkers, atheists, pagans or non-believers. However, the numbers of consumers with a religious belief comprise the majority of the consumers in the market making it relevant to

focus on this type of consumers, especially in the context of Islamic banking industry which emphasise on religious banking because Islamic banking is an alternative for Muslims to avoid interest prohibition as promulgated by the Islamic rules and regulations. Table I presents 27 studies conducted on religiosity from 1994 to 2011 and its relationships with religious influence and consumer behaviour suggesting that religiosity affects consumer behaviour.

Some studies equate religious influence as religiosity, and there are limited studies conducted specifically for measuring Muslim consumers' commitment adhering to Islam as a religion (based on the scope of studies). This creates an opportunity for the present study to contribute to knowledge in providing a religiosity scale measurement. A total of four conceptual studies were subsequently excluded from the scale development process

Author(s)	Relationship of R* and RI**	Religiosity (R*)	
		Relationship of R* and CB***	Scope of study
(Delener, 1994)	RI = R	R → CB	Buying behaviour
(Sood and Nasu, 1995)	–	R → CB	Shopping behaviour
(La Barbera and Gurhan, 1997)	–	R → CB	Subjective well-being
(Hamdani and Ahmad, 2002)	–	Not sig	Philanthropic behaviour
(Jonathan <i>et al.</i> , 2002)	–	R → CB	Shopping behaviour ^a
(Rice and Al-Mossawi, 2002)	–	R → CB	Advertising
(Nittin and Sally, 2004)	RI = R	R → CB	Shopping behaviour
(Rice, 2006)	RI = R	R → CB	Environmental
(Mokhlis and Safiek, 2006)	–	R → CB	Shopping behaviour
(Al-Modaf, 2007)	RI = R	R → CB	Advertising (Conceptual- Qualitative)
(Benjamin <i>et al.</i> , 2007)	–	R → CB	Organic Food Purchase
(Vitell <i>et al.</i> , 2007)	–	R → CB	Business ethics
(Bloodgood <i>et al.</i> , 2008)	–	R → CB	Business ethics
(Cleveland and Chang, 2009)	–	R → CB	Ethnic Identity and Materialism
(Iyer and Kashyap, 2009)	–	R → CB	Investors' Non-Economic Goals
(Iyer and Kashyap, 2009)	–	R → CB	Investors' Non-Economic Goals
(Katz-Gerro <i>et al.</i> , 2009)	–	R → CB	Cultural Consumption
(Swimberghe <i>et al.</i> , 2009)	–	R → CB	Store Loyalty and Complaints
(Vitell <i>et al.</i> , 2009)	–	Conceptual	Business ethics – Lit review
(Vitell <i>et al.</i> , 2009)	–	R → CB	Business ethics – Self Control
(Ateeq-ur and Muhammad Shahbaz, 2010)	–	R → CB	New product adoption
(Kum-Lung and Teck-Chai, 2010)	–	Mixed	Business ethics
(Nazliida Muhamad and Dick, 2010)	–	Conceptual	Buying behaviour
(Parameshwaran and Srivastava, 2010)	–	Conceptual	Buying behaviour
(Taylor <i>et al.</i> , 2010)	–	R → CB	Advertising – Religious symbol
(Witkowski and Reddy, 2010)	–	Weak	Ethical consumption
(Moschis and Ong, 2011)	–	R → CB	Consumer wellbeing and behaviour

Notes: Indicators: R* denotes Religiosity, RI** denotes Religious Influence and CB*** denotes Consumer Behaviour. ^aReligiosity subscale was found to be negatively related to voice, exit and retaliation

Table I.
Studies on religiosity

2.1 Systematic literature review

A database search was performed using the following database: Scopus, Web of Sciences, ProQuest, Ebscohost-Business Premier Source and EconLit using the following keywords “Religious Influence”, “Religious Banking”, “Religiosity” and “Religious Motivation”. During the first stage of the literature search, the terms religion and religious led to a broad range and a large number of studies. Table II presents an overview of the 457 studies found in the five databases.

The figures in Table II suggest a structural decline in the number of articles from the general search terms of “religion” to the specific search terms of “religion” and “consumer behaviour”. In total, 445 studies were found in the five databases, including using both search term consumer behaviour/behavior. In the second stage, the papers were to be filtered to avoid duplication including less relevant papers, out of topic and subject areas. The search term using both English spelling for Ebscohost databases (Business Premier Source and EconLit) were identified to manage the problems of different British and American spelling because a comparison between the two search terms provided similar results. This reduced the number of articles to 269. However, after a meticulous filtering process was conducted, there were approximately 27 numbers of articles were identified in the final analysis, using the search terms of religious, religiosity “AND” consumer behaviour/behaviour. In the third stage, articles with similar topics were grouped together to identify the major topics and sub topics found under religious and consumer behaviour. The lack of empirical research on the impact of religion on consumer behaviour has created a surge of studies conducted in several countries such as Korea (Choi *et al.*, 2010), Japan (Sood and Nasu 1995), the USA, (Vitell *et al.*, 2007; La Barbera and Gurhan 1997; Sood and Nasu 1995), Malaysia, (Wan-Ahmad *et al.*, 2008; Muhammad and Abd Ghani 2006; Muhammad 2009; Mokhlis and Safiek 2006; Mokhlis 2009; Mohd Dali and Yousafzai 2012; Dali *et al.*,

Table II.

Search result in Scopus, Web of Sciences, ProQuest, Ebscohost and EconLit

Database	No. of studies				
	Scopus	Web of Sciences	ProQuest	EbscoHost	EconLit
Religion	71,712	73,367	6,394	15,153	1,021
Religious	20,709	63,203	6,134	15,884	1,479
Religiosity	2247	14	3	576	147
Religious Motivation	448	726	11	32	4
Religious Influences	129	949	19	47	17
Religious Banking	27	6	–	7	2
Religious and Consumer Behaviour	23	12	68	32	7
Religious and Consumer Behaviour	10	4	68	32	7
Religiosity and Consumer Behaviour	16	14	27	12	3
Religiosity and Consumer Behaviour	5	6	27	12	3
Religious Motivation and Consumer Behaviour	–	–	1	–	–
Religious Motivation and Consumer Behaviour	–	1	1	–	–
Religious Influences and Consumer Behaviour	8	–	2	4	–
Religious Influences and Consumer Behaviour	3	1	2	4	–
Religious Banking and Consumer Behaviour	–	–	–	–	–
Religious Banking and Consumer Behaviour	–	–	–	–	–

No.	Item	% agreed	Decision
1	I enjoy reading about my religion	91	Delete
2	I go to <i>masjid</i> because it helps me make friends	64	Delete
3	It does not matter what I believe so long as I am good	18	Delete
4	Sometimes I have to ignore my religious beliefs because of what people might think of me	36	Delete
5	It is important for me to spend time in private thought and prayer	100	Accept
6	I have often had a strong sense of God presence	91	Delete
7	I pray mainly to get relief and protection	82	Delete
8	I try hard to live all my life according to my religious beliefs	100	Accept
9	What religion offers me most is the comfort in times of trouble and sorrow	82	Delete
10	My religion is important because it answers many questions about the meaning of life	91	Delete
11	I would rather join a religious study group than a social group	64	Delete
12	Prayer is for peace and happiness	82	Delete
13	Although I am religious, I do not let it affect my daily life	55	Delete
14	My whole approach to life is based on my religion	100	Accept
15	I pray chiefly because I have been taught to pray	64	Delete
16	Prayers I say when I am alone are as important to me as those I say in congregation	91	Delete
17	Although I believe in my religion, many other things are more important in life	55	Delete
18	I go to a place of worship/ <i>masjid</i> regularly	100	Accept
19	Spiritual values are more important than material things	100	Accept
20	Religious people are better citizens	73	Delete
21	Individuals are free to approach the Lord for themselves	82	Delete
22	Man is responsible in his freedom to exercise his will for good	64	Delete
23	The soul of man is immortal	73	Delete
24	Religious observances are very important to me	100	Accept
25	I think something is wrong if a person has no religious feeling	91	Delete
26	I believe in a life after death	100	Accept
27	I feel I am true to my beliefs in everyday life	91	Delete
28	I make financial contributions to my religious organisation	100	Accept
29	I spend time trying to grow in understanding of my faith	100	Accept
30	Religion is especially important to me because it answers many questions about the meaning of life	91	Delete
31	My religious beliefs lie behind my whole approach to life	82	Delete
32	It is important to me to spend periods of time in private religious thought and reflection	91	Delete

(continued)

Table III
Results of the expert
opinion survey and
the remaining 41
items

No.	Item	% agreed	Decision
33	I enjoy working in the activities of my religious organisation	90	Delete
34	I keep well informed about my local religious group and have some influence in its decisions	64	Delete
35	My relationship with God is extremely important to me	100	Accept
36	I look to my faith as a source of comfort	100	Accept
37	I look to my faith as a source of inspiration	100	Accept
38	My faith impacts many of my decisions	100	Accept
39	I enjoy being around others who shared my faith	73	Delete
40	My religious beliefs help me recognise the dignity and welfare of people	82	Delete
41	I have firm belief in all basic ideological dimensions of Islam	91	Delete
42	Muhammad (p.b.u.h) is his final Prophet	100	Accept
43	I believe there is only one Allah	100	Accept
44	I regularly offer prayer five times a day	100	Accept
45	I fast regularly during <i>Ramadan</i>	100	Accept
46	I regularly recite the Holy <i>Al-Quran</i>	100	Accept
47	I believe that I am obliged to perform Hajj if I meet the prescribed criteria	100	Accept
48	I never offer <i>Sajda</i> saint's graves	40	Delete
49	I always keep myself away from earning through <i>haram</i> (prohibited) means	100	Accept
50	I always try to avoid minor and major sin	100	Accept
51	I know the basic and necessary knowledge about my religion	100	Accept
52	I always try to follow Islamic junctions in all matters of my life	100	Accept
53	It is my duty to give respect to others and give them their rights according to Islamic injunctions	91	Delete
54	I try to avoid any activity, which hurt others	64	Delete
55	I always try to help those who need my help	73	Delete
56	I try to be honest and fair with others	82	Delete
57	I always avoid humiliating others because Islam does not allow doing so	91	Delete
58	I feel sorrow and dissatisfaction when I do something against my faith	100	Accept
59	I have feeling of being tempted by devil	64	Delete
60	I have feeling of being afraid of Allah	100	Accept
61	I have feeling of being punished by Allah for something doing wrong	100	Accept
62	I feel pleasure by seeing others following Islamic teaching	82	Delete
63	My religious beliefs influence what I buy	100	Accept
64	My religious beliefs influence which service providers that I use	100	Accept
65	I pay <i>zakat fitrah</i> every year	100	Accept
66	I make sure that my dress/cloth covers my <i>aurat</i>	100	Accept
67	I make sure the food and drink I consumed are <i>halal</i>	100	Accept
68	I go to the masjid to pray " <i>solat fardh</i> "	91	Delete
69	I perform " <i>solat fardh</i> " in congregation	91	Delete
70	I give charity to the poor and needy	82	Delete

Table III

(continued)

No.	Item	% agreed	Decision
71	I read <i>Al-Quran</i> and perform <i>zikir</i>	100	Accept
72	I have not taken or given bribes	82	Delete
73	I have not taken interest (<i>riba</i>)	100	Accept
74	I visit my family/friends when they are bedridden	70	Delete
75	I thank Allah for my food and drink	100	Accept
76	I fulfil all that I promise	73	Delete
77	I am honest at all times	73	Delete
78	Islam is a way of life	100	Accept
79	<i>Al-Quranic</i> teachings are suitable and practicable in today's life	100	Accept
80	<i>Rasulullah's</i> traditions are suitable and practicable throughout all times	100	Accept
81	All mankind's deeds will be judged and rewarded accordingly after death	100	Accept
82	My earnings are from own effort and not Allah's will	27	Delete
83	Death and destiny are determined by Allah alone	91	Delete
84	Man's wealth depends on their own effort	36	Delete
85	My life has a clear sense of purpose	82	Delete
86	Today's social ills are not due to lack of religious knowledge	45	Delete
87	<i>Al-Quran</i> relieves pain and diseases	91	Delete
88	I follow the <i>sunnah</i> in daily life	100	Accept
89	It is OK not to pay our debt	9	Delete
90	I admire people who own expensive homes, cars and clothes	27	Delete
91	I am interested in status	36	Delete
92	I believe that miracles happened the way the <i>Al-Quran</i> says they did	91	Delete
93	Rewards of paradise encourage me to do good things	100	Accept
94	My family members dress in accordance with religion	82	Delete
95	Frequency of voluntary prayers	91	Delete
96	I perform voluntary fasting other than <i>Ramadan</i>	100	Accept
97	I pay visit to relatives as a religious duty	91	Delete
98	I care about neighbours and their well-being	82	Delete
99	I will greet others even to strangers	70	Delete
100	I watch/listen/attend religious meetings	91	Delete
101	Friday prayers are more important than <i>Eid</i> prayers	82	Delete
102	If found RM1, I will not take and use it	64	Delete
103	If found RM1000, I will not take and use it	64	Delete
104	I am aware of IB system	73	Delete
105	Given a choice, I will choose Islamic loan	91	Delete

Item Theoretical Dimensions
no
The remaining 41 items after expert opinion survey
75 *Ahlaq*
19 Beliefs
26 Beliefs
35 Beliefs
36 Beliefs
37 Beliefs

Item
I thank Allah for my food and drink
Spiritual values are more important than material things
I believe in a life after death
My relationship with God is extremely important to me
I look to my faith as a source of comfort
I look to my faith as a source of inspiration

(continued)

No.	Item	% agreed	Decision
38	Beliefs		My faith impacts many of my decisions
42	Beliefs		Muhammad (p.b.u.h) is his final Prophet
43	Beliefs		I believe there is only one Allah
78	Beliefs		Islam is a way of life
79	Beliefs		Quranic teachings are suitable and practicable in today's life
80	Beliefs		Rasulullah's traditions are suitable and practicable throughout all times
81	Beliefs		All mankind's deeds will be judged and rewarded accordingly after death
88	Beliefs		I follow the sunnah in daily life
93	Beliefs		Rewards of paradise encourage me to do good things
24	Commitment		Religious observances are very important to me
28	Commitment		I make financial contributions to my religious organisation
29	Commitment		I spend time trying to grow in understanding of my faith
63	Influence		My religious beliefs influence what I buy
64	Influence		My religious beliefs influence which service providers that I use
49	Intel		confidence in religious values I always keep myself away from earning through haram (prohibited) means
50	Intel		I always try to avoid minor and major sin
51	Intel		I know the basic and necessary knowledge about my religion
52	Intel		I always try to follow Islamic junctions in all matters of my life
5	Intrinsic		It is important for me to spend time in private thought and prayer
8	Intrinsic		I try hard to live all my life according to my religious beliefs
14	Intrinsic		My whole approach to life is based on my religion
18	Practice		I go to a place of worship/ <i>masjid</i> regularly
44	Practice		I regularly offer prayer five times a day
45	Practice		I fast regularly during Ramadan
46	Practice		I regularly recite the Holy Quran
47	Practice		I believe that I am obliged to perform Hajj if I meet the prescribed criteria
96	Practice		I perform voluntary fasting other than Ramadan
65	<i>Shari'ah</i> -Obligation		I pay zakat fitrah every year
66	<i>Shari'ah</i> -Obligation		I make sure that my dress/cloth covers my aurat
67	<i>Shari'ah</i> -Obligation		I make sure the food and drink I consumed are halal
73	S-Prohibition		I have not taken interest (<i>riba</i>)
71	S-Recommendation		I read Quran and perform zikir
58	<i>Taqwa</i>		I feel sorrow and dissatisfaction when I do something against my faith
60	<i>Taqwa</i>		I have feeling of being afraid of Allah
61	<i>Taqwa</i>		I have feeling of being punished by Allah for something doing wrong

Table III

2014; Mohd Dali *et al.*, 2015), Latin America (Branas-Garza *et al.*, 2009) and Britain (Andrew and Lindridge 2005).

A recent search shows that religiosity has become an attraction towards the interest of the behavioural scientists. For instant, several studies were conducted on the relationships between religious and materialistic values (Yeniars 2016; Ilter *et al.*, 2017), the effects of religiosity and banking (Abou-Youssef *et al.*, 2015; Usman 2015), healthcare (Ahmad Basri *et al.*, 2015; Othman *et al.*, 2015; Abdullah *et al.*, 2017), education (Bakar *et al.*, 2015; Farah *et al.*, 2014; Dali *et al.*, 2014) and many more. Wilson and Liu (2011) managed to relate between Islamic halal branding and implicit and explicit Islamic values affecting the Muslim consumers behaviours. This study took a different ontological perspective which is not a custom in academia, i.e. the Islamic world view. The way we see reality is not confined to the world but encompasses the days hereafter. Therefore, one can be seen irrational when taking this leadership thought as mentioned by Wilson (2012).

3. Methodology

Religiosity measurements are conducted for either single denomination/faith (13 studies) or multiple denominations/faith (7 studies). A considerable amount of literature has been published on single denomination/faith religiosity measurement. However, some of

the religiosity measurements used in these studies were also used in multi-denomination religiosity measurement. Nevertheless, this study focussed on single denomination religiosity measurement that is Islam. The religiosity instruments used found in the systematic database search including cross-referenced studies revealed that only few studies (Nazlida Muhamad and Dick 2010; Alberhairi and Demerdash 1988; Albelaikhi 1997; Alsanie 1989) have attempted to measure the Muslim religiosity. Wilson (2013) argued that proposed quantified scales and evaluations of religiosity require mixed-methods and multi-layered hermeneutical reflective approaches if they were to reflect reality. Therefore, this study used mixed method in formulating the religiosity scale integrating the revealed and acquired knowledge as its epistemology.

3.1 Stage 1 – item selection

The goal of this stage is to collect all relevant religiosity measures in the consumer behaviour literature and to identify the appropriate religiosity items, which are relevant to Islamic principles and guideline according to expert opinions. There are six steps taken in this stage. First, 27 religiosity scales comprising 239 items were collected and pooled together. Identical scales used by seven studies (Vitell *et al.*, 2009; Swimberghe *et al.*, 2009; Iyer and Kashyap 2009; Nittin and Sally 2004; Vitell *et al.*, 2007; Katz-gerro *et al.*, 2009; Kum-Lung and Teck-Chai 2010) were eliminated leaving only unique scales. In total, 86 items were reduced from 239 items leaving 153 items. Second, items with specific religious or nationality measurement and ambiguous wording were reworded, and 48 redundant items were deleted.

Third, the remaining 105 items were numbered for group identification. However, the items in the group were not numbered in sequence to not give the respondents any clues of their previous label as in the literature. All 105 items were given to 20 Islamic scholars, professionals and academicians which required them to identify whether the items are related or not related to Islamic religiosity measurement using an online questionnaire. The experts either had a formal Islamic *Shari'ah* background, or they were involved in Islamic religious activities. This is conducted as the items found from the literature were extracted from general or specific religion religiosity measurement. The items which were identified by the expert as not related or ambiguous to Islamic religiosity measurement will be deleted. In total, 12 scholars responded to the expert opinion survey. A total of 58 per cent of the expert respondents were aged between 26 and 35, while the remaining 42 per cent were aged between 36 and 45. In total, 42 per cent of the expert respondents had PhD degrees, and the remaining 58 per cent had postgraduate qualifications. The respondents' expertise background varied between human rights, accounting and Islamic banking, *fiqh muamalat*, international investment law, *Hadith* and Islamic civilisation and *usul fiqh*. The distribution of the areas of expertise of the respondents was giving a broad coverage of Islamic knowledge while preserving the focus on Islamic religiosity. The results of the expert opinion survey are shown in Table II below.

The expert opinion answers were used to delete items which are irrelevant to Islamic religiosity measurement. Only items with 95 per cent agreement were kept in the study. The items were grouped according to the dimensions or labels given from the literature to specify its domain or constructs (Churchill, 1979). Initially, 20 dimensions were identified, which were then reduced to 12 because of redundancy, i.e. intrinsic and extrinsic motivation; commitment; faith; intellectual experience; influence; *Shari'ah* (which consists of obligation, recommendation and prohibition); *akhlak*; belief; and practice and ethics. The conceptualisation of the dimensions revealed that commitment, intellectual and intrinsic dimensions could be pooled together to avoid confusion to the respondents. In addition,

akhlaq dimension was deleted, as there was only one item remaining in the dimension. The item was transferred to experience dimension. Table IV provides the definitions of these dimensions.

The dimensions defined in Table IV were found empirically by previous researchers to be significant affecting religiosity of an individual. However, these dimensions might be overlapping with each other because their contextual studies were different. Therefore, we eliminated the overlapping problems by combining several dimensions into a manageable set of five dimensions with a total of 41 items, i.e. *beliefs* (14 items); *commitment* (10 items); *influence* (2 items); *practice* (11 items); and *experience* (4 items). The optimal number of items

Dimension	Definition	Author
<i>Akhlaq</i> *	The meaning of this dimension is virtue and vices. There is only 1 item in this dimension, therefore it is suggested that this item "I thank Allah for my food and drink" to be moved to experience dimension	(Wan-Ahmad <i>et al.</i> , 2008)
Beliefs	This group is a combination of items from faith (Wan-Ahmad <i>et al.</i> , 2008), ideological – include the overall beliefs associated with a religion (Ateeq-ur, and Muhammad Shahbaz, 2010) and religious beliefs – (Hassan <i>et al.</i> , 2010) dimensions that were taken from different measurement scales by different authors. However, the meanings of the dimensions are the same	(Hassan <i>et al.</i> , 2010, Wan-Ahmad <i>et al.</i> , 2008, Ateeq-ur and Muhammad Shahbaz, 2010)
Commitment	<i>Religious commitment</i> , which is defined as the degree to which a person adheres to his or her religious values, beliefs, and practices and uses them in daily living	(Worthington <i>et al.</i> , 2003)
Influence	Influence of religious beliefs on buying and the service providers choice	(Taylor <i>et al.</i> , 2010)
Intellectual*	Refers to an individual's knowledge about religion. However, a thorough examination of the items in this dimension revealed that the items are related to commitment dimension. Therefore, all the items will be transferred to commitment dimension	(Ateeq-ur and Muhammad Shahbaz, 2010)
Intrinsic*	Intrinsic religiosity is defined as a meaning-endowing framework in terms of which all of life is understood. However, this dimension is seemed to be the same as the commitment dimensions	(Allport and Ross, 1967)
Practice	Hassan <i>et al.</i> define practice as practice all basic <i>ibadah</i> (rituals), enrichment, seeking knowledge and the act of giving donation to charity, while Ateeq-ur and Muhammad Shahbaz (2010) define practice as ritual which includes the actions prescribed by religion such as: prayer, fasting, pilgrimage. Wan Ahmad <i>et al.</i> define it as <i>Shari'ah</i> dividing it into three, i.e. obligation, recommendation and prohibition. However, the term <i>Shari'ah</i> is too broad because it will include all aspects of Islam. Therefore, the word practice or ritual or good deeds (<i>amal soleh</i>) would be more precise	(Ateeq-ur and Muhammad Shahbaz, 2010, Hassan <i>et al.</i> , 2010)
Experience	Experience dimensions describe the practicality of the religion	(Ateeq-ur and Muhammad Shahbaz, 2010)

Note: *Dimension is combined with other dimension

Table IV.
The conceptualisation of the religious dimensions

for the proposed religiosity scale was determined using the Spearman–Brown prophecy formula (Bhattacharjee, 2002). This formula estimates the number of items needed in a scale to obtain a desired reliability based on the number of items and reliabilities of comparable prior scales.

Extrapolating from the scales, Table V reports the number of items in each dimension as suggested by the Spearman–Brown prophecy formula for reliability of 0.8. The Spearman–Brown Prophecy test suggested that 11 to 12 items are required for a scale reliability of 0.80 for belief dimension, ten to 11 items in commitment dimension, ten to 11 items in practice dimension and 11 to 12 items in experience dimension. The reliability of 0.80 is generally considered adequate for confirmatory research (Bhattacharjee 2002). Furthermore, Bhattacharjee (2002) recommended that keeping the measurement scales to be as small as possible would reduce semantic overlap between the scales and minimise the respondents' fatigue.

3.2 Stage 2: Q-sorting

The goals of this stage as stated by Moore and Benbasat (1991) were twofold: to assess the construct validity of the various scales being developed and to identify any particular items, which still may be ambiguous. The judges were requested to sort the various items into dimension or construct categories to achieve the goals. This technique is similar to Moore and Benbasat (1991) and Bhattacharjee (2002). Each item was printed separately on one 4 × 6 inches index card. The categories/labels with each definition printed under the label were specified from the literature. The label and definition were printed on A4 cards. The definitions of each label were given with the aim to assist judges in putting the items that suited the labels. The cards were then shuffled into a random order for presentation to the judges. Each judge sorted the cards into categories of items independently from the other judges. The selection of judges was made based on convenience sampling. The judges were selected based on the criteria that they are Muslim. In total, there were 27 respondents who had participated in the three sorting rounds. Prior to sorting the cards, judges were briefed on sorting procedures and the definition of the labels.

The sorting rounds are qualitative measurements using item-placement agreement. It measures both reliability of the classification scheme and the validity of the items that were selected in the first stage. The method required analysis of how many items were placed by the judges within the targeted constructs. In other words, as each item was included in the pool explicitly to measure a particular underlying construct, a measurement was taken of the overall frequency with which all judges placed items within the intended theoretical construct. The higher the percentage of items placed in the target construct, the higher the

Table V.
Optimal items based
on Spearman–Brown
prophecy formula
and inter-rater raw
agreement

Dimension	Original (existing) items	Previous alpha	Optimal items	Agreement round 1	Agreement round 2	Agreement round 3
Beliefs	3 (14) items	0.51	12 items	0.62 (14 items)	0.53 (16 items)	0.78 (12 items)
Commitment	10 (10) items	0.78	11 items	0.51 (10 items)	0.74 (25 items)	0.58 (23 items)
Influence	2 (2) items	Na	Na	0.60 (2 items)	–	–
Practice	4 (11) items	0.61	11 items	0.57 (11 items)	–	–
Experience	4 (4) items	0.62	12 items	0.59 (4 items)	–	–
Overall hit ratios				52%	77%	75%
Placement ratios				Average: 0.58	Average: 0.63	Average: 0.68

degree of interjudge agreement across the judges. Scales based on categories that have a high degree of correct placement of items within them can be considered to have a high degree of construct validity with a high potential for good reliability scores. Table VI suggests that in the first sorting round, the results based on 17 judges revealed that the raw agreement of the judges was relatively low.

In addition, the overall placement hit ratios was approximately low at 52 per cent for round 1. The lowest was experience dimension achieving only 27 per cent of the targeted placement followed by commitment at 41 per cent indicating that the items might be confusing or ambiguous (figures were not shown in the table). For example, the judges were unsure in placing the items between commitment and practice. This is because some of the judges perceived the items as a commitment, while the others perceived it as practice. A further examination of the definition of the constructs revealed that they are inter-related because the word practice appears in both definitions. In addition, the experience construct was problematic, as the items were placed all over in the other constructs. Therefore, the items and constructs were reviewed before the second sorting round was conducted.

The goal was to increase the percentage of correct item placement in its targeted theoretical construct by reviewing, rewording the items and reconstructing the constructs. In the first sorting round, we identified the incorrect placement items that might arise from confusing and ambiguous wording or problems of items loading in more than one constructs, which might be because of its wording or the theoretical constructs. The identification of the incorrect placement was identified, and the higher frequency of item placement was located in the dimensions of commitment and practice.

In the next step, nine items were reworded to overcome the problem or were moved to be in appropriate constructs. For example, the item “I look to my faith as a source of comfort” was reworded to “I believe that my faith is a source of comfort” to reduce its ambiguity. Some items with low inter-rater reliabilities were merged or deleted resulting in two final constructs beliefs and commitment.

Figure 1 shows the movement of items from the original five constructs into beliefs (16 items) and commitment (25 items) constructs. The two dimensions proposed are in line with the emphasis on the concept of those who believe (*iman*) and do good deeds (*amal*)

Agreement measure		# of items					Round 1	
<i>Raw agreement</i>								
Beliefs		14					0.616071	
Commitment		10					0.508824	
Experience		4					0.591912	
Influence		2					0.602941	
Practice		11					0.569519	
Average		41					0.577853	
Sorting round		First Respondents 17						
Target category		Beliefs	Commitment	Experience	Influence	Practice	Total	Target (%)
Beliefs		141	24	30	6	15	216	65
Commitment		36	66	5	0	54	161	41
Experience		26	22	20	2	3	73	27
Influence		8	12	2	25	6	53	47
Practice		27	46	11	1	109	194	56
Total item placements		697		Hits	361	Overall hit ratio	52	

Table VI.
Inter-raters raw agreement and item placement scores (sorting round 1)

soleh) where they are always paired in the holy verses of the Quran. The following table tabulates the chapters and verses in the Quran mentioning belief (*iman*) and commitment (*amal soleh*) (Harun 2018).

In the second sorting round, five judges were asked to sort the 41 items into the two constructs of belief and commitment. In this phase, the raw agreement of the judges increased to 63 per cent (see Table V). In addition, the placement overall hit ratios were higher compared to the previous sorting round achieving at 77 per cent. The increase in both constructs implies that the review process has managed to increase the judges' comprehension. The steps in the items and constructs review mentioned earlier in sorting round 1 were taken into consideration. In total, four items from the belief construct were deleted, while two items were reworded. Two additional items in commitment constructs were also deleted. For the third sorting round, in which, five independent judges were asked to review the items, we had 12 items in belief construct and 23 items in commitment construct. The raw agreement of the judges increased to 67 per cent. In addition, the judges' item placement score was stable in the range between 75 and 80 per cent. As the item placement score was stable between the acceptable ranges, the 35 items were further tested using factor analysis as explained in the following section.

4. Scale validation and refinement

The preliminary psychometric properties of the initial religiosity scale were examined via a pilot test. The results were used to refine and streamline the initial scale, which was then revalidated using data from a field survey of online banking users. The results of these studies are described below.

The questionnaire for the initial religiosity scale was administered to a sample of 50 respondents. The second pilot test was a continuation of the first pilot test after a few amendments to the item wording. The total respondents participated were 180 people. Table VIII represents the demographic profiles of the 180 respondents in the pilot study.

Cronbach's alpha and Guttman's lower bound (GLB) reliability analysis shown in Table IX were highlighted as the standard reliability analysis discussed in many academic journals.

The Cronbach's alpha reliability coefficients in the pilot tests are comparatively higher and better if compared to the average alpha from the previous studies as reported. For example, the average alpha for belief construct was 0.51 as compared to 0.933 in the second pilot test. In addition, the average alphas for commitment and practice from the previous studies were also relatively sufficed at 0.779 and 0.61 as compared to 0.946 in the pilot

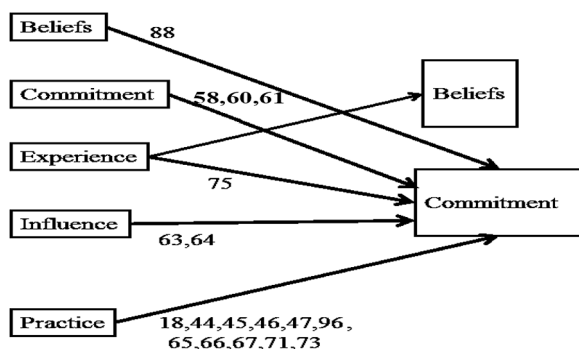


Figure 1.
Items movement into
beliefs (16 items) and
commitment
(25 items)

Table VII.
Chapter and verses
in the Quran
mentioning belief
(*iman*) and
commitment
(*amal soleh*)

Belief (Iman)	Amal soleh (commitment to do good deeds)
<i>Iman (The Characteristics of The Believers)</i>	Al-Baqarah (2), v 25, 62, 82, 183, 277
Al-Anfaal (8), v 2-4	Ali-'Imran (3), v 57, 133-136, 195
Al-Mukminun (23), v 1-6	An-Nisaa' (4), v 57, 69, 122, 124, 162, 173
<i>Iman to the judgement day</i>	Al-Maa'idah (5), v 9, 69
Al-Baqarah (2), v 62, 177	Al-An'aam (6), v 48, 104
An-Nisaa' (4), v 136, 162	Al-A'raaf (7), v 42-43
At-Taubah (9), v 18	Yunus (10), v 9-10, 26, 41
Al-Mujaadalah (58), v 22	Hud (11), v 3, 11, 23
<i>Iman to Al-Quran</i>	Ar-Ra'd (13), v 23, 29
Al-Baqarah (2), v 4, 41, 136	Ibrahim (14), v 23
An-Nisaa' (4), v 136, 162, 175	Al-Hijr (15), v 49
Al-Qasas (28), v 53-55	An-Nahl (16), v 31-32, 97
Yaa Siin (36), v 11	Al-Israa' (17), v 9, 82
Muhammad SAW (47), v 2	Al-Kahfi (18), v 2-3, 30-31, 46, 88, 107-108, 110
At-Taghaabun (64), v 8	Maryam (19), v 60, 96
<i>Iman to ALLAH</i>	Taha (20), v 75-76, 82, 112
Al-Baqarah (2), v 62, 102, 112, 136, 177, 218, 256, 277-278, 285	Al-Anbiyaa' (21), v 105
Ali-'Imran (3), v 16-17, 84, 141, 160	Al-Hajj (22), v 14, 23, 38, 50, 54, 56
An-Nisaa' (4), v 136, 162, 175	Al-Mukminun (23), v 51
Al-Maa'idah (5), v 69	An-Nur (24), v 55
Al-An'aam (6), v 162	Al-Furqaan (25), v 71
Al-Anfaal (8), v 2-4	Asy-Syu'araa (26), v 227
At-Taubah (9), v 18-22, 112, 124	An-Naml (27), v 3
Yunus (10), v 2, 9, 99-100, 105-106	Al-Qasas (28), v 67
Hud (11), v 23	Al-'Ankabut (29), v 7, 9, 58-59, 69
Ar-Ra'd (13), v 20-24, 29, 31	Ar-Ruum (30), v 15, 31, 44-45
Ibrahim (14), v 23, 31	Luqman (31), v 8-9
Al-Israa' (17), v 65	As-Sajdah (32), v 17-19
Al-Kahfi (18), v 2-3, 107-108	Al-Ahzaab (33), v 35
Maryam (19), v 96	Saba' (34), v 4, 37
Al-Hajj (22), v 38, 54	Faatir (35), v 7, 10, 29-30
Al-Mukminun (23), v 1-11, 57-61, 109, 111	Yaa Siin (36), v 11
An-Naml (27), v 2-3	Sod (38), v 28
Al-Ahzaab (33), v 43-44	Al-Mukmin (40), v 40
Yaa Siin (36), v 11	Fussilat (41), v 8, 33, 46
Al-Mukmin (40), v 7-9	Asy-Syura (42), v 22-23
Asy-Syura (42), v 47	Al-Jaathiyah (45), v 15, 30
Al-Ahqaaf (46), v 13-14, 31	Muhammad S.A.W. (47), v 2, 12
Muhammad SAW (47), v 17	Al-Fath (48), v 5, 29
Al-Fath (48), v 4	Al-Hujuraat (49), v 1
Al-Hujuraat (49), v 14-15, 17	Ar-Rahman (55), v 46, 48, 50, 52, 54, 56, 58
Al-Mujaadalah (58), v 22	Al-Mujaadalah (58), v 11
At-Taghaabun (64), v 9, 11	At-Taghaabun (64), v 9
At-Talaaq (65), v 11	At-Talaaq (65), v 11
Al-Jin (72), v 13	Al-Haaqqah (69), v 22-24
Abasa (80), v 38-39	Al-Muddasir (74), v 39-40
<i>Iman to Allah (men and women)</i>	Al-Mutaffifin (83), v 22-28
At-Taubah (9), v 71-72	Al-Insyiqaaq (84), v 25
Al-Fath (48), v 5	Al-Buruuj (85), v 11
Al-Hadiid (57), v 12	Al-A'laa (87), v 14-15

(continued)

Table VII.

Belief (Iman)	Amal soleh (commitment to do good deeds)
<i>Iman to ALLAH and Rasul</i>	
Ali-'Imran (3), v 179	Al-Fajr (89), v 27-30
An-Nisaa' (4), v 136, 152, 171	Al-Balad (90), v 12-18
Al-A'raaf (7), v 158	Al-Insyiraah (94), v 7
An-Nur (24), v 51, 62	At-Tiin (95), v 6
Muhammad SAW (47), v 33, 35	Al-'Alaq (96), v 19
Al-Fath (48), v 9	Al-Bayyinah (98), v 7-8
Al-Hadiid (57), v 7-8, 19, 21, 28	Al-'Asr (103), v 2-3
Al-Mujaadalah (58), v 22	
Al-Hasyr (59), v 7	
As-Saff (61), v 10-13	
At-Taghaabun (64), v 8	
<i>Iman to the Holy Books</i>	
Al-Baqarah (2), v 177	
An-Nisaa' (4), v 136	
<i>Iman to Angels</i>	
Al-Baqarah (2), v 177	
An-Nisaa' (4), v 136	
<i>Iman to the Prophets</i>	
Al-Baqarah (2), v 177	
<i>Iman and Disobedience</i>	
An-Nisaa' (4), v 150-151	

second test. Thus, for this study, the alphas have exceeded the targeted level of minimum reliability of 0.70. As 35 items are too many for this type of instrument, we wished to eliminate as many as possible while retaining desired reliability levels. Thus, the factor analysis was conducted and discussed below.

The factor analysis was conducted in five rounds, and the factors were restricted to two factors. The first factor analysis included all 35 items. In total, four items from the belief construct and seven items from the commitment construct were deleted because either the factor loadings are lesser than 0.5 or the items load on both factors. The factor analysis was repeated three times until all the items were loaded in both factors without any factor loadings and cross loading problems. In the fourth round, items incorrectly loaded based on theoretical construct were deleted. For instance, C5, C7, C14 and C16 loaded in the belief construct where they were theoretically unjustified. Table X shows the result of the factor analysis conducted for the full pilot test.

There are only six final items remaining in the belief construct and ten items remaining in the commitment construct. Even though there are quite a number of items which have been reduced from the total items of 239 items from 27 measurements, the existing items represent the minimum religiosity adherence for Muslims, including both genders male and female. In addition, the alphas for both constructs are 0.934 and 0.922 for belief and commitment, respectively. This study has managed to reduce about 93.31 per cent of items leaving 16 items from a vigorous combination of qualitative and quantitative analysis. Finally, there are six items in the belief dimension where the items were directed in asking the respondents regarding their beliefs about Islam. The second dimension is commitment or practice as defined by Hassan *et al.* (2010). There is a total of 10 items in this dimension. The concept is the combination of the commitment as defined by Worthington *et al.* (2003) and practice as highlighted by Hassan *et al.* (2010). Therefore, the second dimension for the

JIMA 10,1	Profiles	N	All	
				(%)
242	<i>Gender</i>			
	Male	73		40.8
	Female	106		59.2
	Total	179		100.0
	<i>Age</i>			
	18-25	24		13.3
	26-35	76		42.2
	36-45	65		36.1
	46-55	9		5.0
	56-65	6		3.3
	Total	180		100.0
	<i>Highest educational background</i>			
	LCE – SRP	1		0.6
	SPM	5		2.8
	Diploma	7		3.9
	Degree	47		26.1
	Master	98		54.4
	PhD	21		11.7
	Total	179		99.4
	<i>Formal religious background</i>			
	No formal education	17		9.4
	Less than secondary school	17		9.4
	Secondary Education	88		48.9
	<i>Sekolah Pondok</i>	2		1.1
University	52		28.9	
Middle East University	4		2.2	
Total	180		100.0	

Table VIII.
Demographic profiles
for respondents
(N = 180)

Table IX. Reliability coefficients for pilot tests	Scale name	Items	Initial pilot n = 50		Items	Full pilot n = 180	
			Alpha	GLB		Alpha	GLB
	Belief	12	0.703 (n = 47)	0.790 (n = 47)	12	0.933 (n = 166)	0.950 (n = 166)
	Commitment	23	0.883 (n = 43)	0.889 (n = 43)	23	0.946 (n = 157)	0.963 (n = 157)

Table X. The results of the factor analysis for the full pilot test		Original 35 items	1st factor analysis	2nd factor analysis	3rd factor analysis	4th factor analysis	5th factor analysis
Σ variance explained	n/a	59.45%	66.09%	67.22%	66.85%	67.32%	
Items in belief	12	16	12	11	10	6 (alpha 0.934)	
Items in commitment	23	19	12	11	11	10 (alpha 0.922)	
Items deleted	n/a	B1, B4, B7, B8, C1, C2, C6, C11, C18, C21, C22	C3, C10	B3	C5, C7, C14, C16, B11	None	

Items	Reference
<i>Belief Dimension</i>	
Muhammad (p.b.u.h) is His final Prophet	Ateeq-ur and Muhammad Shahbaz (2010)
I believe there is only one Allah ^a	Ateeq-ur, and Muhammad Shahbaz (2010)
I believe <i>Al-Quranic</i> teachings are suitable in today's life	Wan-Ahmad <i>et al.</i> (2008)
All mankind's good deeds will be judged and rewarded accordingly after death	Wan-Ahmad <i>et al.</i> (2008)
I believe <i>Rasulullah</i> ^b 's traditions are suitable throughout all times	Wan-Ahmad <i>et al.</i> (2008)
I believe that my faith is a source of comfort	Cleveland and Chang (2009)
<i>Commitment and practice dimensions</i>	
My religious beliefs influence what I buy	Taylor <i>et al.</i> (2010)
I always keep myself away from earning through <i>haram</i> (prohibited) means such as interest from conventional banking	Ateeq-ur and Muhammad Shahbaz (2010)
I make sure that my dress/cloth covers my <i>aurat</i> ^c	Wan-Ahmad <i>et al.</i> (2008)
I always perform the <i>ziki</i> ^d	Wan-Ahmad <i>et al.</i> (2008)
I follow the <i>Sunnah</i> ^e in daily life	Hassan <i>et al.</i> (2010)
My religious beliefs influence which service providers I use	Taylor <i>et al.</i> (2010)
I always try to avoid minor and major sin (this item was deleted because of confusion between minor and major sins)	Ateeq-ur and Muhammad Shahbaz (2010)
My whole approach to life is based on my religion	Delener (1994)
It is important for me to spend time in private thought and prayer	Delener (1994)
I regularly offer prayer five times a day	Ateeq-ur and Muhammad Shahbaz (2010)
Notes: ^a He is the one without partner, unique without peer, ultimate without opposite, alone without equal. He is one, pre-eternal, beginninglessly, un-create, everlastingly abiding, unceasingly, existent, eternally limitless, the ever-self-subsisting through whom all else subsists, ever enduring, without end. He is, was, and ever will be possessed of all attributes of majesty, un-annihilated by dissolution or separation through the passage of eons or terminus of interims. He is the first and last, the outward and inward, and he has knowledge of everything. Cited from Keller (2011); ^b <i>Rasulullah</i> means the messenger of God referring to the Prophet Muhammad p.b.u.h; ^c Parts of the body to be clothed as required by Islam; ^d Remembrance of Allah. ^e The sayings, deeds and approvals of Prophet Muhammad p.b.u.h. <i>Sunnah</i> is also referred to as <i>Hadith</i>	

Table XI.
Items of religiosity

religiosity scale is named as commitment to practice or doing good deeds (*amal soleh would be more precise*). Likert scale from 1 to 5 will be used (5 = Always, 4 = Very Often, 3 = Sometimes, 2 = Rarely, 1 = Never). The items in both dimensions are as follows.

5. Conclusion

Religiosity is an upsurging important research area in understanding consumer behaviours. The different religious affiliations have a different impact towards individual beliefs, which then determine their consumption patterns. Islam is a religion, which governs Muslims with the *Shari'ah* laws in every aspect of life including political, economic and spiritual based on *Al-Quran and As-Sunnah*. However, religiosity levels differ from one to another, which will affect their perception on whether the bank is complying with *Shari'ah* or not. A systematic review of the literature revealed that Islamic religiosity is sparse, and the study offers a relatively new Islamic religiosity measurement adapted from various scales. The scale development was explained in detail involving qualitative and quantitative approaches evolved from three different stages. From the preliminary study, the scale has a satisfactory reliability and validity results. Two dimensions that are beliefs and commitment can be

used to measure the level of adherence of a Muslim to Islam. However, further studies need to be conducted to test the application of this religiosity scale in many different contexts.

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