



## Research Article

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# Development and Validation of Secularity Scale for Muslims

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**Abstract:** There is currently no secularity scale with strong psychometric properties that would allow for the examination of the secularization process experienced by Muslims. Thus, the purpose of this article is to develop a psychometrically sound and quick-to-apply scale that can be used to measure the degree of secularity among Muslims. For exploratory factor analysis (EFA), an inventory with 65 items was applied to 1,573 university students, and it yielded a two-factor structure with an internal reliability of 0.975 for Daily Life factor and 0.952 for Faith and Prayer factor. After EFA, the confirmatory factor analysis (CFA) was performed with 4,391 individuals, and a structure that can be deemed very solid was found. The measurement invariance was also examined, and it was discovered that the scale can be used for various populations. In addition, the scale has convergent validity, a high test-retest result, and discriminant validity. The 25-item Secularity Scale has a new theoretical approach – which is not only based on faith and prayer but also daily life activities – and sound psychometric properties. Examining how secularity manifests itself in Muslim societies might be useful in describing, predicting, and explaining how individuals act in a variety of contexts. The scale might also help to avoid the use of approach utilized in Christian-centred secularity debates in the case of Muslim-majority societies.

**Keywords:** secularity, secularization, scale development, measurement, Islam, Muslims

## 1 Introduction

Jörg Stolz<sup>1</sup> concluded his presidential address at the “Karel Dobbelaere Conference” with the following remarks:

An obvious shortcoming is that much of our quantitative data are relatively recent and predominantly concerned with Western societies and the Christian religion. We clearly still lack a model that can be applied across the world, as becomes evident when we look, for example, at developments in countries with Muslim majorities.

As stated in the remarks of Stolz, the aim of the present study is to extend the boundaries of secularization debates towards the Muslim majority societies. In recent years, reports and studies stating that the influence of the supernatural realm on social life has waned in Muslim-majority countries have been published.<sup>2</sup> On that account, evaluating the secularization process or the extent of secularity among Muslims, particularly in

<sup>1</sup> Stolz, “Secularization Theories,” 301.

<sup>2</sup> Arabbarometer, “Arabs Are Losing Faith;” Çokgezen, “Can the State Make You More Religious?;” Ekinci, [*Kurdish Secularization*]; Ertit, “God is Dying in Turkey as well;” KONDA, “Social Change Report;” Maleki and Arab, “A 2020 Survey Report.”

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modern or modernizing countries, has the potential of becoming a new subject of study for the disciplines of sociology of religion, social psychology, and psychology of religion. The issue at hand is that there has yet to be a secularity scale developed with robust psychometric features that is suitable for Muslim-majority societies. However, despite the lack of a secularity scale with strong psychometric features, many religiosity scales<sup>3</sup> centred around Muslims have been developed. Although a detailed criticism of the said religiosity scales will be made below, four main problems should already be pointed out here: (i) faith and prayer are used as the sole criteria, (ii) the presence of an essentialist approach towards Islam, (iii) fundamental scientific steps of scale development were not adhered to, and (iv) religiosity scales developed for Christians were adapted for Muslims. The use of these scales in secularity/secularization debates may lead to the possibility that the main factor to be measured is overlooked, not to mention the risk of restricting arguments to a narrow band. For these reasons, the following four basic suggestions should be taken into consideration in the development of any such secularity scale. (a) The approach utilized in Christian-centred secularity debates should not be used in the case of Muslim-majority societies. (b) The scale to be developed should not adopt an essentialist approach towards Islam and the Qur'an, but should rather take into consideration the diversity exhibited by Islam as practiced in different geographic regions. (c) When discussing secularity/secularization, daily life activities should be at the forefront of the conversation, in addition to faith and prayer. (d) The scale should have a solid theoretical foundation, a large sample size representative of the target population, and scores that are sufficiently reliable and valid.

Considering these precursors, it should be reiterated that a secularity scale as such for Muslims is yet to be developed. Therefore, I propose that a secularity scale should be developed to quantify the existence and degree of secularity among Muslims. This need corresponds to two of Gorsuch's answers to the question "why should a new scale be developed?" (a) If there is no existing scale for certain structures, and (b) if conceptual or theoretical subjects cannot be measured with the existing scales.<sup>4</sup>

The present study is divided into seven main sections. Since the purpose of developing this scale is to contribute to the secularization debates in Muslim-majority societies, the second section, i.e. the conceptual framework, focuses on a detailed discussion of the concept of secularization. In this section, the concept of a supernatural-centred secularization and its main dimensions are presented to the reader, while aiming to demonstrate that secularity in the context of Islam is not a "mere absence of religiosity." In the third part, i.e. Critics of Previous Scales, it will be discussed why existing scales used to measure religiosity in Muslim-majority societies or secularity/non-religiosity in Christian-majority societies should not be used to measure secularity in Muslim-majority societies. Emphasizing the lack of quantitative studies, the fourth section of the study will present the secularity scale development process. The development and validation of the scale comprises five distinct studies:

*Study 1:* Involves scale development procedures and a pilot study conducted with 199 individuals.

*Study 2:* Conducted with 1,573 participants to perform an exploratory factor analysis and measure the internal consistency of the scale.

*Study 3:* Involves confirmatory factor analysis and measurement invariance performed with 4,391 individuals.

*Study 4:* Involves two different data collection processes ( $n = 555$  and  $n = 138$ ) carried out six weeks apart with the aim of measuring convergent validity and test-retest.

*Study 5:* Involves new data collection process ( $n = 274$ ) to analyse whether the scale has discriminant and known-group validities.

The last sections of the article (fifth, sixth, and seventh) are, respectively, devoted to the Discussion, Limitations, and Implications, where the findings are discussed, the limitations of the article are stated, and possible implications of the scale are suggested.

<sup>3</sup> They are discussed in detail in the "Critics of Previous Scales" section.

<sup>4</sup> Gorsuch, "Measurement in Psychology of Religion."

## 2 Conceptual Framework

### 2.1 What Is to Be Measured?

The concept of secularization has become a debated term in the field of sociology of religion, particularly in the latter half of the twentieth century. Although the concept gained further prominence in academic studies in the 1960s with the debates between David Martin<sup>5</sup> and Bryan Wilson,<sup>6</sup> it cannot be easily stated that there is a consensus among sociologists of religion as to what secularization is and is not.<sup>7</sup> The cultural pluralism that emerged with rationalization,<sup>8</sup> the diminishing influence of religious authorities on social life,<sup>9</sup> the liberation of the secular sphere (state, economy, art, science) from the religious sphere,<sup>10</sup> the replacement of traditional society by a complex, pragmatist, and modern society,<sup>11</sup> the interruption of the chain of collective memory based on the sanctity of tradition,<sup>12</sup> and the decrease in individuals' behaviours or thoughts centred on religion<sup>13</sup> are coded in the literature as the concept of secularization. On the other hand, there are also sociologists of religion who view secularization not as the decline in the social influence of religion, but as the complete disappearance of religion or the de-religionization of the modern individual. For example, since Berger coded secularization as de-religionization in his late works,<sup>14</sup> he interpreted the fact that there are still those who follow religion or go to church in a modern country such as the United States as the absence of secularization or the collapse of the secularization theory. Similarly, many academic works<sup>15</sup> that interpret the presence of religious individuals in the modern period as the collapse of secularization theory are acknowledged and used as reference texts by a wide audience.

These definitions are those that have emerged within Western culture. Therefore, religion and religious institutions are naturally at the centre of the concept of secularization. However, if religion or a religious institution is at the core of the concept, it will be difficult to utilize it to explain the social transformations experienced in different geographies. This is because in a number of cultures, religion is not necessarily experienced in the same way as in the West, and religious institutions do not necessarily have the same sphere of influence as in the West.<sup>16</sup> There may even be belief systems without religious institutions, as is the case in Buddhism. Therefore, the present article argues that in order for the concept of secularization to be applied in different geographies and cultures independent of time and space, and to show that it is not about a “mere absence of religiosity,” the concept should be centred not on religion but on the supernatural realm, which also encompasses religion.<sup>17</sup> On the other hand, the concept should be defined in such a way that (a) secularization debates should be exempt from the “true religion” debate that theologians are particularly fond of raising, (b) erroneous secularization debates based on comparisons between two different geographies (such as America and Europe) can be avoided, and (c) the field of debate is expanded with the inclusion of daily life along with faith and prayer. For this reason, this scale study was carried out based on the concept of secularization formulated by Ertit, as follows: Secularization is “the relative decrease in the social prestige and

<sup>5</sup> Martin, “Towards Eliminating the Concept of Secularization.”

<sup>6</sup> Wilson, *Secular Society*.

<sup>7</sup> Casanova, *Public Religions*.

<sup>8</sup> Lechner, “The Case against Secularization,” 1104.

<sup>9</sup> Chaves, “Secularization as Declining Religious Authority,” 750.

<sup>10</sup> Casanova, *Public Religions*, 19.

<sup>11</sup> Dobbelaere, “Descriptive Concept of Secularization,” 238.

<sup>12</sup> Hervieu-Léger, *Chain of Memory*, 121.

<sup>13</sup> Bruce, *God Is Dead*, 3.

<sup>14</sup> Berger, “Epistemological Modesty,” 974.

<sup>15</sup> Cox and Swyngedouw, “The Myth of the Twentieth Century,” 12; Hadden, “Secularization Theory,” 588–600; Hadden, “Old Paradigms,” 84; Stark and Iannaccone, “A Supply-Side Reinterpretation,” 230.

<sup>16</sup> Kasselstrand et al., *Beyond Doubt*.

<sup>17</sup> However, it should be noted that this approach is neither new nor original. Scholars frequently refer to the term “supernatural” in their works (Bruce, “Secularisation, Church and Popular Religion;” Cragun et al., “The Nonreligious–Nonspiritual Scale;” Coleman and Jong, “Counting the Nonreligious;” Kasselstrand et al., *Beyond Doubt*.)

social influence of the dominant supernatural realm (that is, religions, folk beliefs, religion-like structures, magic, astrology and so forth) within a defined period of time and in a particular place.”<sup>18</sup>

As can be seen, the concept is centred not on religion but on the supernatural realm. In the definition, the term “supernatural” is proposed and used as a comprehensive concept, since secularization does not refer to the decline in the social influence of religion, but rather to that of the supernatural realm, of which religion is a part or a subset. Claims, attitudes, and beliefs without a cause-and-effect relationship regarding events that cannot be explained by natural sciences (physics, chemistry, biology, etc.) fall within the realm of supernaturalism.<sup>19</sup> There are two main reasons why the concept of secularization is centred not on “religion” but on the “supernatural realm.”

The first reason is the desire to use the concept in geographies with other supernatural teachings besides Christianity. Etymologically, the concept of secularization originated and was first used in Europe, particularly in the Christian world where the Church was central.<sup>20</sup> However, trying to apply a concept that has been shaped by the culture in a certain part of the world to different geographies without touching its meaning may render the concept itself dysfunctional or may limit the area of the geography where the concept will be applied.<sup>21</sup> Therefore, the definition of secularization ought to be independent of religion and the Church, but at the same time, it should be transformed in a way that includes both and can explain social transformations in different geographies of the world. By focusing on the supernatural instead of religion, it is possible to have an operational concept for understanding the relations between transcendent powers (holy, divine, supreme, transcendent, transphysical, etc.) and society in various geographies that do not have a Church. If the “uniform notion of religion”<sup>22</sup> is at the centre of the concept, people who do not follow a systematic religious belief but have different experiences of the supernatural and live their daily lives accordingly will be excluded from the secularization debates. For example, even if individuals’ orthodox faith is weak, astrology may shape their daily lives; they may visit shrines to find a spouse, tie cloths to trees, or may visit fortune tellers or sorcerers in the hope of being able to predict the future. Although these behaviours are not rooted in the Abrahamic religions, they are de-secular because what causes such behaviours is rooted in a realm beyond physics.

The second reason for the centrality of the concept of the supernatural is the desire to prevent the “true Islam” or “true religion” rhetoric, particularly among theologians, from undermining the secularization debates. This is because if religion (let’s say Islam) will be at the centre of the secularization debates, then someone else will have the right to ask the question “Which Islam?”. Since Islam does not have a central religious institution like the Church that defines the “true faith,” different theological views on the definition of “true faith” or “religiosity” are found across the Muslim World.<sup>23</sup> While there are many different claims to “true Islam,” the discipline of sociology is not obliged to choose one of such claims. Which interpretation of the Qur’an or which sect or cleric represents the “true Islam,” is not the domain of the social sciences. If the supernatural realm, not religion, is at the heart of the concept, then secularization studies will be excluded from the debate on “true Islam” or “true Religion.” Although Islam in Iran, Arabia, and Yemen is experienced differently, they all claim to draw their provenance from the supernatural. Due to the different interpretations of Islamic sources in different cultures and geographies, the Qur’an or hadiths (sayings or deeds of the Prophet Muhammad) should not be used as the principal sources when creating scale articles on secularization in Muslim majority societies.

In order to concretize what has been stated earlier, it would be useful to refer to the ceremonies that are held on the 7th and 40th days of a funeral in Anatolia. For example, if the new generations have become more distant from the ceremonies held on the 7th day of a funeral compared to the past generations, a sociologist of religion who engages in secularization debates based on the “supernatural sphere” will label this process as secularization. However, a theologian who focuses on the Qur’an would argue that these rituals are already

<sup>18</sup> Ertit, “Secularization,” 5.

<sup>19</sup> Steup, “Empiricism,” 21–2.

<sup>20</sup> Taylor, *A Secular Age*.

<sup>21</sup> Burchardt et al., “Multiple Secularities.”

<sup>22</sup> *Ibid.*, 3.

<sup>23</sup> El-Menouar, “Muslim Religiosity.”

related to ancient Anatolian beliefs that are not part of Islam, and therefore, this change should not be defined as secularization. However, folk beliefs which are beliefs, sacraments, and related rituals that continue to exist alongside the official and dominant religious doctrine<sup>24</sup> are also part of the supernatural realm. Throughout history, people have had beliefs without having a systematic doctrine (such as Abrahamic religions) in order to overcome difficult times, make sense of natural phenomena, cope with the reality of death, make the struggles of daily life more bearable, and to make sense of the devastation caused by incurable diseases.<sup>25</sup> Thus, in order to prevent such theological debates from occupying the field of social sciences, the term supernatural should be placed at the centre of the concept. This is because “the debate about what is or is not true Islam” is not the domain of sociology or psychology.

The phrase “within a certain period of time” in the definition is used to denote that the social power of the supernatural sphere has decreased “compared to the past” rather than representing an absolute value. For the secularization debates, a reference point in time and space is needed. As stated by Bruce, although studies involving a single time period are helpful in terms of description, they cannot be utilized to understand the process of secularization.<sup>26</sup> This is because secularization is not a description of a situation but that of a process. Secularization debates should be conducted by making comparisons, not by taking instantaneous absolute values into account. For this reason, particularly in the Muslim cultures, the expressions “secularized” or “more secular” can be used – when compared to the past – even for a highly religious individual or society.<sup>27</sup> There does not need to be a strong positive correlation between secularity and non-religiosity within the Muslim culture. In fact, theoretically, it may well be that not even a single person in a secularizing society loses their faith. This is because secularization is not associated with the internal or heartfelt submission or belief among individuals, but rather with the external manifestations of this submission or faith.<sup>28</sup>

The term “in a certain society” in the definition is used to avoid a common methodological error in secularization debates. Whether or not a society or an individual has become secularized, it should be investigated based on their own history. However, some works discuss secularization by comparing different societies, usually American and European.<sup>29</sup> The main argument of these works, which claim that the secularization theory has collapsed, is that churches in the US are not vacant like those in Europe and that a much more vibrant religious life is experienced in the US compared to Western European societies. This claim is not convincing when it comes to the secularization debates. The fact that America has been less secularized than Europe does not mean that American society has not become secularized. In simpler terms, let us imagine that there are two close friends who initially had the same height. Then, one of them increased their height by 10 cm, while the other grew by 20 cm. It is evident that the friend who grew by 20 cm is indeed taller. Nevertheless, it is important to note that the friend who grew by 10 cm has also become taller in the process. Indeed, the findings of many academic studies reveal that the US has become secularized – sharply – when evaluated by itself.<sup>30</sup>

Up to this point, the words or phrases pertaining to the concept of secularization have been explained, and the reason why such a definition is needed in a Muslim-majority society has been expressed. In the following section, the dimensions of secularization will be discussed.

<sup>24</sup> Yoder, “Folk Religion,” 14.

<sup>25</sup> Holding money up to the full moon in order to get rich, wearing evil eye beads, spending substantial sums on fortune tellers, slaughtering a rooster as a sacrifice, spilling water behind departing travellers, considering ringing in the left ear as a bad sign, attributing holiness to the sun, believing that a preacher can cure a terminally ill patient, and similar folk beliefs can be cited as examples.

<sup>26</sup> Bruce, “Secularisation, Church and Popular Religion,” 546–7.

<sup>27</sup> In 2021, a techno party was held in Saudi Arabia, where men and women danced together (The Times of India, “Party in Saudi Arabia.”) Individuals do not have to be irreligious just because they dance and attend this party. However, since the generations before them did not dance because “religion forbade it,” it means that those dancers have become relatively secular – at least in terms of dancing.

<sup>28</sup> Ertit, [*Secularization Theory*], 73.

<sup>29</sup> Davie, *Is Europe an Exceptional Case?*, 28–9; Berger et al., *Religious America, Secular Europe?*, 141.

<sup>30</sup> Voas and Chaves, “Is the United States a Counterexample?,” 1523; Kasselstrand et al., *Beyond Doubt*.

## 2.2 Dimensions of Secularity

Which dimensions should be investigated to measure secularity? It is not easy to answer this question independently of the dominant supernatural belief and how it is experienced. Particularly in academic studies based on Christianity, questions such as these play a central role: “Does God actually exist?,” “Is there a Heaven and Hell?,” “Is there a resurrection day?,” “Do you believe Jesus saved you?,” “Do you have a religious membership?,” or “Do you go to church?”<sup>31</sup> However, questions about faith and prayer alone are insufficient to assess secularity in societies with a Muslim-majority population. Why?

Within the secularization debates, all criteria that are thought to provide an impression of social transformations should certainly be taken into account. However, the centrality of faith and prayer criteria for measuring secularization in countries with a Christian majority reduces Christianity to a doctrine that is disconnected from daily life and consists only of faith and prayer.<sup>32</sup> For example, for Stark and associates, who claim that the secularization theory has collapsed, issues such as homosexuality, premarital sex, one-night stands, age of virginity loss, dress code, abortion or divorce do not attract as much attention as Church affiliation. Stark and other scholars<sup>33</sup> who argue that the theory has collapsed in the West adopt a Church-centred interpretation.<sup>34</sup> The phrases church-oriented religion or church-centred religion, used by Thomas Luckmann<sup>35</sup> to describe religious life or the nature of religion in modern European societies, further clarify why sociologists of religion working in Christian-majority societies focus on the Church. However, since there is no institution like the Church in Muslim-majority societies, and since the Church and the mosque signify different things,<sup>36</sup> focusing only on faith and prayer while investigating the secularization process among Muslims may confine the secularization debates to a narrow field. This is because there are differences between Christianity and Islam as they are experienced in the twenty-first century in terms of their penetration into everyday life. How?

Islam seeks to influence daily life through familial directives, traditions, the Quran, societal values, clerical fatwas, hadiths, neighbours, etc... That is why “how much a Muslim practices Islamic commandments outside of times of worship,” “how much do they consider faith when choosing their friends/wife/job/city of residence,” and “how much do they take into account the orders and prohibitions of Islam on clothing, eating-drinking, sexuality and other daily activities” should also be other main topics of debate on secularity in Muslim-majority societies.<sup>37</sup> I do not claim that Christianity is a religion that does not affect everyday life or that studies that cover everyday life have not been conducted. However, in the twenty-first century, for individuals to express that they are believers, to attend mass every Sunday, to perform rites of passage in church, to pray before meals, to believe in heaven and hell, to think that the Bible descended from the Creator, or to believe that Jesus is the saviour, would mean that they would be coded as highly desecular for Western-centred secularization debates. However, for Muslims, being a believer and engaging in religious practices does not necessarily entail a direct coding of individuals as desecular. This is because, at least in the early twenty-first century, Islam not only wants to be believed in and worshipped but also seeks to directly shape daily life. Therefore, the maintenance of daily life must surely be one of the main dimensions in any secularization debate for Muslims. Otherwise, there is a danger that the different life styles exhibited by an individual

<sup>31</sup> Stark, “Secularization, R.I.P.,” Levin et al., “Are Religious ‘Nones’ Really Not Religious?,” Voas and Chaves, “Is the United States a Counterexample?”

<sup>32</sup> See Voas, “Debate on Jörg Stolz’s Article,” 326, for a “pop up” critique of the secularization theory centred on faith alone.

<sup>33</sup> Stark and Iannaccone, “A Supply-Side Reinterpretation,” Hadden, “Secularization Theory,” Berger, “Epistemological Modesty,” Bellah, *Beyond Belief*.

<sup>34</sup> In fact, even with a Church-centred interpretation, it does not seem possible to claim that the secularization theory has collapsed because the churches have lost power drastically. To argue that the theory has collapsed, the data need to be manipulated. The following texts should be referred to both to indicate how Stark manipulated the data and to see what happened to the Churches in light of current data (Bruce and Voas, “Secularization Vindicated”; Kasselstrand et al., *Beyond Doubt*.)

<sup>35</sup> Luckmann, “On Religion in Modern Society,” 28.

<sup>36</sup> El-Menouar, “Muslim Religiosity.”

<sup>37</sup> Amman, “[Explicit and Implicit Secularization],” Aydınalp, [*Religious Life in Gerece*].



who prays and fasts and at the same time goes on vacation and drinks alcohol with their premarital partner will be omitted from studies. In Muslim-majority societies, the fact that an individual is a believer and fulfils their religious obligations does not exclude them from the secularization debates. This is because, individuals who are highly faithful and religiously committed can also be strongly secularized compared to their own past or the generations that preceded them.<sup>38</sup>

As can be noticed, the three aforementioned dimensions of secularization, i.e. faith, prayer, and daily life, are actually included in the five dimensions proposed by Charles Glock<sup>39</sup> to measure religiosity. So why are the other two dimensions, i.e. Religious Knowledge (Intellectual Dimension) and Religious Feeling (Experiential Dimension), not included in the dimensions of secularity? In fact, individuals having a high level of knowledge on the supernatural do not necessarily mean they will live their daily lives in accordance with that knowledge. In addition, although an individual may be a non-believer, their level of knowledge regarding the supernatural may be quite high. Similarly, someone who has no knowledge of scriptural religiosity may spend their entire daily lives under the influence of supernatural teachings – along with that of their environment. Someone who knows the Qur’an by heart need not be more desecular than someone who has never read it. On the other hand, it is not easy to measure what Glock refers to as the “experiential dimension.” Glock himself explains it as follows: “Except where they are expressed in overt and extreme forms, the individual’s feelings toward or sensitivity to the divine are not likely to be openly expressed in everyday life.”<sup>40</sup> Since it is the conduct of everyday life that matters for the secularization debates, one’s reported feelings towards the supernatural are far from being discriminative where the degree of secularity among individuals is concerned.

Last but not least, when the supernatural realm is at the center of the concept of secularization, it will be seen that many different doctrines other than Islam or any major religion are also part of the secularization debates. As mentioned earlier, folk beliefs, astrology, new religious movements, spirituality, and other topics that have the potential to influence daily life should also be itemized by experts and researchers. Items related to non-Islamic supernatural teachings may be excluded from the scale as a result of validity and reliability analyses. However, supernatural issues (within or outside the orthodox religion) that are already thought to affect daily life should be presented to participants in item pools.

### 3 Critics of Previous Scales

According to the definition of secularization adopted by the present study, the supernatural realm rather than religion should be central, while everyday life should be one of the key dimensions of the scale. At this point, an unusual problem is encountered because no measurement tools with robust psychometric features were found in previous studies. In Muslim-dominated societies, it can be said that secularity is a neglected topic in quantitative research. As examples can be seen below, discussions of religiosity rather than secularity take place, and scales or surveys are constructed in this context. However, this is not the only problem. Rather, when a broad assessment is made, four fundamental issues stand out in these scales.

The first issue (a) is that many scales are based on an essentialist approach to Islam, meaning a single interpretation of Islam based on the Qur’an and/or hadiths. However, measuring religiosity based on the Qur’an or hadiths raises two fundamental problems that are interrelated in terms of the secularization debates. First, when what is being measured is called “religiosity,” then the following idea is claimed in the subtext: “As researchers, we know what religiosity is and we will measure it.” However, Islam, like many other religions, is not a religion that is experienced independently of time, space, and culture.<sup>41</sup> A behaviour pattern

<sup>38</sup> At this point, it should be stressed that the present study does not claim that the frequency of prayer or faith is unimportant in debates on secularity or that these criteria are not worth exploring. On the contrary, it is self-evident that these criteria will provide an indication of an individual’s level of secularity and are among the most essential dimensions of secularity.

<sup>39</sup> Glock, “Religious Commitment.”

<sup>40</sup> Ibid., 104.

<sup>41</sup> Atay, [*The Source of Religion*], 35.

that researchers see as religiosity may be outside of religion for another approach. The way religiosity is experienced may change over time. Furthermore, when a researcher aims to measure religiosity instead of secularity, the theological debate on “true Islam” or “true religion” finds a suitable ground to flourish. However, whether or not a pattern of behaviour is part of religion, if it derives its source from the supernatural, then that pattern of behaviour should be part of the secularization debates.

This criticism can be countered by the notion that “if the scale items are derived from the Qur’an or hadiths, then they are Islamic.” However, what is important for the sociology of religion is not what is written in the Qur’an or what the hadiths claim, but how these are reflected in everyday life. This is because those who read the Qur’an do not necessarily interpret it in the same way. For this very reason, it is not surprising that there are religious groups that denounce each other based on the Quran.<sup>42</sup> Similarly, hadiths are not necessarily binding for individuals who identify themselves as Muslim. On the contrary, a significant number of Muslims believe that the hadiths are fabricated, and so bitter and unresolved debates about this continue to rage throughout the Islamic World.<sup>43</sup> As a natural consequence of this, it can be observed that there are individuals who do not accept the hadiths and embrace a highly desecular culture, but there are also individuals who accept the hadiths but live a secular daily life compared to their past. For this reason, scales based on the Qur’an and hadiths should not be used in secularity debates.

For example, when the “Muslim Daily Religiosity Assessment Scale” (MUDRAS) was developed, the following statement was used to describe the characteristics of the items: “All items in the proposed instrument (MUDRAS) are generated based on at least one reference either from the Qur’an or Hadith.”<sup>44</sup> However, the statement below cannot be generalized for Muslim societies:

For instance, while it is compulsory for Muslim men to observe their five daily obligatory prayers in congregation in the mosque, it is not compulsory for Muslim women (in fact, it is highly recommended they [i.e., Muslim women] pray at home).<sup>45</sup>

Although the author makes this claim as an assertion of “true Islam,” there are many who do not interpret Islam as the author does and therefore do not consider it obligatory to go to the mosque five times a day (e.g. five daily prayers are not currently practiced in Iran). Similarly, Qur’anic verses or hadiths have been used as the main item-generating device in the following measurement tools: “the Muslim Religiosity-Personality Inventory” (MRPI),<sup>46</sup> “the Abrahamic Religiosity Scale,”<sup>47</sup> “a Scripture-Specific Religious Orientation Scale,”<sup>48</sup> “the Maternal Piety Scale,”<sup>49</sup> “the Moral Character Muslim Personality” (MCMP),<sup>50</sup> “Religiosity Scale Development,”<sup>51</sup> “Religiosity among Muslim,”<sup>52</sup> and “The Religiosity of Islam Scale.”<sup>53</sup>

The second issue regarding the scales (b) is that in some of the studies where Muslim individuals constituted the study sample, scales or inventories developed for Christians are used.<sup>54</sup> For example, “the Muslim Attitudes toward Religion Scale”<sup>55</sup> and “the Attitudes toward Islam Scale”<sup>56</sup> were created through an adapta-

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<sup>42</sup> Al-Huseini, “Takfir.”

<sup>43</sup> Musa, “The Qur’anists.”

<sup>44</sup> Olufadi, “MUDRAS,” 167.

<sup>45</sup> Ibid., 168.

<sup>46</sup> Krauss, “The Religiosity of Malaysian Muslim Youth.”

<sup>47</sup> Khodayarifard et al., “Abrahamic Religiosity Scale.”

<sup>48</sup> Khodadady and Dastgahian, “Religious Orientation Scale.”

<sup>49</sup> Hassan et al., “Measuring the Unmeasurable.”

<sup>50</sup> Al-Ammar et al., “Muslim Personality.”

<sup>51</sup> Dali et al., “Religiosity.”

<sup>52</sup> Mahudin et al., “Religiosity among Muslims.”

<sup>53</sup> Jana-Masri and Priester, “Qur’an-Based Instrument.”

<sup>54</sup> Ji and Ibrahim, “Islamic Doctrinal Orthodoxy;” Kharim, “Measuring Religiosity;” Long and Elghanemi, “Fear of Death;” Mahabeer and Bhana, “Among Indian Adolescents;” Sahin and Francis, “Assessing Attitude toward Islam;” Salleh, “Religiosity in Development.”

<sup>55</sup> Wilde and Joseph, “Religiosity and Personality.”

<sup>56</sup> Sahin and Francis, “Assessing Attitude toward Islam.”



tion and extension of “the Measuring Attitudes Towards Christianity Scale” by Francis and Stubbs<sup>57</sup> based on Christian practices and beliefs. However, daily codes of conduct that are regarded as religious/spiritual/secular within the context of Christianity may not be acknowledged in the same manner when it comes to different religious cultures. For example, the item “Believing in Mohammad’s Prophethood is necessary for salvation from Hell”<sup>58</sup> in the “Development of a Muslim Religiosity Scale” is not a meaningful statement for Islam. When an article written for Jesus is used in this way for Muslims, the context is lost. In “Islamic Doctrinal Orthodoxy and Religious Orientations,”<sup>59</sup> it was attempted to create items by substituting the word mosque for church.<sup>60</sup> However, this approach does not make sense for a Muslim-majority context. As El-Menouar rightly argues, unlike the Christian context, mosque attendance or formal membership within a mosque does not hold an intrinsic role within Muslim piety.<sup>61</sup> A devout Muslim may establish a direct connection with Allah, rendering the mosque and the Imam as non-essential intermediaries. In addition, the fact that men who pray in the mosque on Fridays do not go to the mosque in the rest of the week does not mean they do not pray in days other than Fridays. Therefore, scales developed to measure the level of religiosity of Christians should be used with caution not only in secularization debates but also in religiosity debates in different cultures.

The third issue regarding the scales (c) is that the dimension of daily life is generally excluded from the scales, or dimensions or items not related to secularization are added to the scale. Some of the items in these scales only concern matters of faith and prayer,<sup>62</sup> while some involve questions on knowledge<sup>63</sup> or morality<sup>64</sup> although they are unrelated to secularity discussions. Having a debate on religiosity or secularity over morality may raise some questions that are difficult to answer. Even if individuals share the same religion, they do not have to share the same moral philosophy. Similarly, the items such as “give money to poor non-obligatory,”<sup>65</sup> “I give [to the needy] of the good things which I have (honourably) earned,”<sup>66</sup> “I am pleased with what I have,”<sup>67</sup> “fulfill your promise,” or “speak the truth in every situation”<sup>68</sup> in religiosity scales may be accusatory towards secular or non-religious individuals due to the subtext of the items. Helping the poor or doing good is not by definition a religious or a desecular act.

In addition, “A Psychological Measure of Islamic Religiousness”<sup>69</sup> is not easy to use as it has 60 items, many of which are not related to secularity as they focus on individuals’ well-being rather than daily life activities. For example, items such as “I read the Holy Quran because I find it satisfying” or “I fast in Ramadan because when I fast I feel close to Allah” are not relevant to the degree of secularity among individuals. If an individual fasts not so much “to feel close to Allah” but “to avoid burning in hell” or for some other reason, this is not information to be taken into account in a debate on secularization. Likewise, if an individual reads the Qur’an not because they are “satisfied” but because they “fear Allah,” this does not change the outcome in terms of the secularization debates. The fact that the reason behind the action refers to the supernatural is sufficient for inclusion in the secularization debates. Similarly, in the OK-Religiosity Scale,<sup>70</sup> the items “I feel moved when I listen to religious chanting/reciting such as Azan, prayer or Qur’anic verses” and “I really enjoy when I take part in religious

57 Francis and Stubbs, “Attitudes Towards Christianity.”

58 Albelakhi, “Muslim Religiosity Scale,” 128.

59 Ji and Ibrahim, “Islamic Doctrinal Orthodoxy.”

60 For example, “A primary reason for my interest in religion is that my Mosque has congenial social activities” and “One reason for my being a member of a Mosque is that such membership helps to establish a person in the community” (p. 196).

61 El-Menouar, “Muslim Religiosity,” 55.

62 AlMarri et al., “Muslim Practice and Belief Scale;” Alshehri et al., “Muslims’ View of God;” Dali et al., “Religiosity;” Jana-Masri and Priester, “Qur’an-Based Instrument;” Khalaf et al., “Arabic Religiosity Scale;” Wilde and Joseph, “Religiosity and Personality.”

63 Alghorani, “Measure of Islamic Religiosity;” Na’imah and Septiningsih, “Islamic Religiosity Scale;” Albelakhi, “Muslim Religiosity Scale;” El-Menouar, “Muslim Religiosity.”

64 Saroglou, “The Big Four Religious Dimensions.”

65 Al Zaben et al., “The Muslim Religiosity Scale.”

66 Khodadady and Dastgahian, “Religious Orientation Scale.”

67 Mahudin et al., “Religiosity among Muslims.”

68 Olufadi, “MUDRAS.”

69 Abu Raiya et al., “Islamic Religiousness.”

70 Ok, “The Ok-Religious Attitude Scale.”

activities” are not meaningful in terms of the secularization debates. For the fact that a person is moved by the call to prayer does not necessarily mean that they spend their lives under the influence of the supernatural. What is more, individuals can also take part in almost any religious activity without taking delight in it, but out of obligation or fear. As far as secularity is concerned, it does not matter whether one enjoys it or not, but rather whether one possesses that pattern of behaviour or not. Likewise, the fact that one feels the presence of God does not necessarily mean that they live their daily lives according to God’s commands and prohibitions. On the contrary, some individuals may have a very liberal conception of God all the while feeling God’s presence.

Last but not least, the fourth issue (d) is that many scales do not possess robust, psychometric properties. Despite the fact that exploratory and confirmatory factor analyses should be performed on different samples to ensure validity, confirmatory factor analysis was not undertaken in many scales related to Muslim religiosity/secularity.<sup>71</sup> In addition, in some studies, the number of participants and number of items evaluated (88 items, 144 participants) do not allow for a robust analysis.<sup>72</sup>

Before concluding this section, it is necessary to briefly mention the “secularity” or “non-religiosity” scales that have been developed in the Western culture or in Christian-majority regions. The experience of secularity can differ based on the dominant supernatural domain and its level of influence on daily life. As a result of these variations, using secularity or non-religiosity scales that were developed within a Christian cultural context or more widely acknowledged non-religiosity scales may present theoretical challenges when applied to discussions on secularity in a Muslim-majority society. These challenges may arise due to the unique dynamics and complexities of the Muslim-majority society’s supernatural and cultural context. For example, the Dimension of Secularity (DoS) scale<sup>73</sup> recognizes atheism, agnosticism, humanism, and scientism as secular identities, and it was developed to measure them. Likewise, “The Reasons of Atheists and Agnostics for Non-belief in God’s Existence Scale”<sup>74</sup> is a scale developed to understand why non-believers do not have faith. “The Non-Religious-Non-Spiritual Scale (NRNSS): Measuring Everyone from Atheists to Zionists”<sup>75</sup> was developed to distinguish between an atheist, a person who identifies as spiritual but not religious, and a devout religious.

It should be emphasized that in secularizing Muslim-majority societies, religion may still profoundly influence daily life. Especially in Muslim countries, there may be many secularized individuals who have faith but whose faith does not influence their daily lives. Let us even go one step further. Theoretically, it may well be that not even a single person in a secularizing Muslim society actually has to lose their faith. In other words, even if surveys show that 100% of the population believe in Allah and fast, a harsh secularization process may be pervading Muslim-majority societies. In Western European and North American societies where Christianity is dominant, secular identities are easily expressed by the absence of faith, whereas in a Muslim-majority society, dynamics such as premarital dating and sexuality, alcohol consumption, and the removal of hijab may mean that the individual is experiencing a severe secularization process even if they are still believers. In addition, what “religion” means and encompasses can vary from culture to culture. A pattern of behaviour that one person sees as part of institutional religion may not be religious for another. What is more, spiritual movements have long influenced Western everyday life and, consequently, academic literature. However, although there has been an increase in the number of those who are part of spiritual movements, it remains difficult to state that these movements have become widespread enough to influence daily life of large masses in Muslim countries.<sup>76</sup> It should also be kept in mind that an individual holds on to certain spiritual beliefs and conducts their daily activities in line with such beliefs may not change the fact that they have become secularized.<sup>77</sup> Indeed, if this new movement touches daily life less than the former belief, it means that a secularization process has been experienced.

<sup>71</sup> Aflakseir and Coleman, “Religious Coping Scale;” Dali et al., “Religiosity;” Khan, “Muslim Religiosity Scale;” Krauss et al., “Adaptation of a Muslim Religiosity Scale.”

<sup>72</sup> Albelalikh, “Muslim Religiosity Scale.”

<sup>73</sup> Schnell, “Dimensions of Secularity (DoS).”

<sup>74</sup> Bradley et al., “Nonbelief in God’s Existence Scale.”

<sup>75</sup> Cragun et al., “The Nonreligious–Nonspiritual Scale.”

<sup>76</sup> Cengiz et al., [*Spiritual Pursuits in Turkey*.]

<sup>77</sup> Bruce, *Secularization*, 102–11.

As a result, a psychometrically robust scale that incorporates target individuals' or societies' own cultures, one that does not overlook daily life nor approach religion essentialistically, is therefore needed. The following section of the study includes the steps in the development of this scale.

## 4 The Development Process of the Scale

### 4.1 Item Development Process

There were four main sources for the item pool. The first (a) is the theoretical section of the book called "Secularization Theory" by Ertit.<sup>78</sup> A major portion of the items in the item pool was derived from a thorough review of the theoretical section of this book. The second source of the item pool is (b) religiosity scales developed for Muslim-majority nations (mentioned above), as well as several Turkish-language religiosity inventories.<sup>79</sup> Items from these studies that do not conflict with the present study's conceptual framework were included in the item pool either directly or with some changes. The third source of the item pool (c) involves questions written by 104 students from the Faculty of Arts and Sciences at a university in Turkey's Central Anatolian Region. The students were given an assignment to answer the question "What questions should be asked in order to understand in what ways and to what extent the supernatural realm (religion, folk beliefs, astrology etc.) affects a person's daily life?" The questions that were thought to be compatible with the conceptual framework were adapted to the scale language and added to the item pool. The last group (d) to contribute to the item pool were experts.

There were 205 items in the item pool when it was originally formed and based on certain criteria, some of them were eliminated. The first criterion (a) dealt with inclusivity. Items which concern a very restricted group in Muslim societies for 2020s were excluded. These items had limited coverage and were not encountered regularly by the general population. Statements such as "Using a sperm bank to conceive a child is acceptable" or "Having children does not require marriage" might be good examples of this criterion. The second criterion (b) dealt with the individual intentions. The items relevant to "intention" were excluded from the pool due to the conceptual framework. The major focus of secularity is not individuals' conscious submission or intent, but the moments in which supernatural realm is mirrored in daily life. The third criterion (c) was related to inter-item similarity. Items with the same or similar topics were either combined or reduced in number. The fourth criterion (d) was about the absence of a "knowledge dimension" of secularity. The fact that an individual knows a lot about Islam or has memorized the Quran does not guarantee that Islam influences their daily lives. On the contrary, because of their interest in religious history and religious studies, a non-believer may also have a high level of understanding regarding Islam or other supernatural teachings. The fifth criterion (e) concerned the balanced inclusion of faith, prayer, and daily life elements in the scale. The weights of items associated with faith and prayer were restricted due to the conceptual framework. The sixth criterion (f) was related to the establishment of gender equality. Gender-specific acts or behaviours were not included, while actions common to both genders were emphasized. Out of 205 items that were re-evaluated in light of these six criteria, an 83-item inventory that could be presented for the perusal of experts was developed. Following consultation with the experts, these alterations were made to the pool's items: (a) Items with a limited scope or the potential to confuse respondents were excluded. (b) In some items, words or expressions were changed on the condition that the content remains the same. (c) Items related to some topics that I did not wish to include were added. For example, two items on spiritualism, which I believe is not yet divisive for the present-day Muslim individuals and society, have been added. Therefore, a 90-item questionnaire was developed for the pilot application.

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<sup>78</sup> Ertit, [*Secularization Theory*].

<sup>79</sup> Coştu, "[A Religious Orientation Scale];" Kirman, [Religion and Secularization]; Yapıcı, "[A New Religiosity Scale]."

## 4.2 Study 1 – Pilot Application

The 90-item inventory was applied to a group of 199 individuals. The sample consisted of students from the Faculty of Arts and Sciences and Faculty of Islamic Sciences at a university in Central Anatolia, as well as 32 individuals known by the researchers to have a secular background. Following feedbacks from the pilot application, items that were difficult to comprehend or created confusion were either rephrased or removed.

Following the pilot application, the number of items in the inventory was reduced from 90 to 65. When these 65 articles are examined in detail, it is seen that they cover the following topics: marriage, sexuality, funeral, politics, interest, headscarf, friend choice, vacation, folk beliefs, alcohol, other daily practices, prayer, homosexuality, education, faith, abortion, spiritualism, and dress code.

## 4.3 Study 2 – Exploratory Factor Analysis

### *Method*

For exploratory factor analysis (EFA), the aim was to reach students studying in several faculties at a university located in Central Anatolia using stratified purposeful sampling. Because Turkey, like the rest of the world, was then experiencing the pandemic caused by COVID-19, the data collection process was conducted online rather than face to face. Academics from various faculties were invited to share the survey form's link with their students during selected courses or in the course's online group. For the faculties with insufficient samples, the WhatsApp groups of the 1st, 2nd, 3rd, and 4th grades of many departments at the university were reached, and the missing faculties were thus covered.

### *Participants*

A total of 1,573 university students participated in the research. Of the sample, 69.8% were women ( $n = 1,098$ ), 28.6% were men ( $n = 450$ ), and 1.6% ( $n = 25$ ) were those who did not want to specify their gender. The classes that make up the sample are as follows: Prep class ( $n = 78$ , 5%), 1st year ( $n = 312$ , 19.8%), 2nd year ( $n = 310$ , 19.7%), 3rd year ( $n = 402$ , 25.6%), and 4th grade ( $n = 469$ , 29.8%). The distribution on the basis of faculties is given in Table 1.

**Table 1:** Comparative distributions of the students constituting the study population based on their faculty

Faculty	Total number of students in the faculty	Number of students reached	Ratio of the number of students reached to the total
Faculty of Sports Sciences	783	63	4%
Faculty of Arts and Sciences	2,308	222	14.1%
Faculty of Education	2,337	194	12.3%
Faculty of Economics and Administrative Sciences	2,918	258	16.4%
Faculty of Communication	376	50	3.2%
Faculty of Islamic Sciences	1,393	331	21%
Architecture and Design Faculty	269	23	1.5%
Faculty of Engineering	3,021	218	13.9%
Faculty of Health Sciences	1,319	164	10.4%
Faculty of Tourism	218	23	1.5%
Faculty of Veterinary Medicine	211	27	1.7%
Faculty of Medicine*	186	—	—
Total	<b>15,339</b>	<b>1,573</b>	<b>100% (1,573 participants)</b>

\*Students in this faculty were not included in the sample because they were studying at a university located in a different city (Konya).

### Data Analysis

Following the completion of the data collection process, the JASP was used to determine the dimensions that the scale had. To determine the suitability of the data collected for factor analysis, the Kaiser–Meyer–Olkin (KMO) coefficient was calculated and the Barlett sphericity test was conducted prior to the EFA. Kaiser–Meyer–Olkin measure of sampling adequacy, 0.987, indicated that the sample was factorable. The Bartlett’s test of sphericity was also significant ( $\chi^2 = 84353.201$ ,  $p < 0.001$ ), indicating that factor analysis is an appropriate method.<sup>80</sup>

After the suitability of the scale items to factor analysis was determined, EFA was performed by selecting the following criteria on the JASP program: (a) using oblique<sup>81</sup> (promax) rather than orthogonal rotation (varimax), (b) a minimum eigenvalue of 1, (c) exclusion of items with factor loadings less than 0.3, and (d) no substantial cross-loadings on multiple factors.

### Results

As a result of the first analysis, items were grouped into three factors with eigenvalues greater than 1, and the total explained variance was 55%. However, items<sup>82</sup> 17, 26, and 36 were excluded from the scale because they were negatively charged. After removing these three items, the scale became a two-factor structure and the explanation rate of variance increased to 56%. At this stage, items were removed from the scale if they had loaded both factors, and the difference between the item values was less than 0.1. In addition, since the factors still could not be labelled theoretically, the cutoff value was increased to 0.4. As a result of these steps, items<sup>83</sup> 2 and 12 were likewise removed from the scale, and the cutoff value was increased to 0.5 since the theoretical structure had not yet been constructed. At this stage, items<sup>84</sup> 4, 21, 40, 47, and 57 were also excluded from the scale since they could not be included in either factor. It should be noted that the items that were removed up until this point were largely related to folk beliefs, abortion, and astrology. Despite the fact that the remaining items covered topics such as daily life, faith, and prayer, the cutoff values were increased from 0.55 to 0.6 by adding 0.01 at a time in order to obtain a more robust and stronger factor structure and to eliminate items measuring similar topics. As a result of these processes, items<sup>85</sup> 1, 3, 7, 15, 19, 20, 23, 24, 25, 35, 41, 43, 51, 52, and 55 were also excluded from the scale. However, despite the fact that the cutoff value was set at 0.6, item 54 (I pray at holy/kandil nights), which had a factor loading value of 0.596, was kept in the scale for content validity. Table 2 shows the items included in the sub-dimensions identified through the analysis, as well as their numbers.

The first factor titled “Daily Life” (DL) consists of 26 items encompassing behavioural patterns based on the supernatural realm in the daily life practices of the Muslim majority in Turkey. These 26 items load 0.634–0.917 on their factor and explain 39% of the variance. The second factor consists of 14 items encompassing the

<sup>80</sup> Hair et al., “Multivariate Data Analysis.”

<sup>81</sup> This rotation method was selected as it was thought that factors related to secularity would be interrelated. (De Jong et al., “Dimensions of Religiosity”; Kline, *Factor Analysis*).

<sup>82</sup> 17 (Near-accurate information can be obtained through certain fortune-telling techniques.), 26. (I follow horoscopes.), 36. (The universe makes everyone experience what they are supposed to).

<sup>83</sup> 2 (I can marry someone who does not believe in Allah), 12. (I would not want my daughter to wear hijab).

<sup>84</sup> 4 (Rain prayer should be performed in times of drought), 21. (Unwanted pregnancies can be terminated for any reason), 40. (Abortion can be performed for any reason), 47. (I practice supererogatory fasting), 57 (I visit shrines.).

<sup>85</sup> 15 (Homosexuals should not be visible in society), 19. (I believe in the existence of jinn), 20. (I would want to marry a religious person), 23. (I perform the salaah), 1. (I think that those who have religious beliefs are more moral than those who do not have religious beliefs), 3. (According to my belief, I do not use interest-bearing loans), 7. (My religious belief is effective in determining the right/wrong things in my life), 24. (It is important for me that my child has religious beliefs), 25. (I would want to send my child to a Qur’an course), 35. (I abstain from premarital sexual intimacy due to my faith), 41. (Friday prayer should not be skipped), 43. (I can be close friends with those who do not believe in Allah), 51. (I believe in the evil eye), 52. (I would want to marry someone who fulfils their religious duties), 55. (Nothing we experience in the universe is a coincidence, everything has a meaning).

**Table 2:** Factor loadings

Item no	Factor 1	Factor 2	Uniqueness
m5		0.621	0.439
m6		0.688	0.489
m8		0.820	0.319
m9	0.738		0.430
m10	0.803		0.343
m11		0.721	0.394
m13	0.653		0.367
m14	0.702		0.479
m16		0.620	0.538
m18	0.898		0.359
m22	0.831		0.343
m27		0.806	0.423
m28		0.794	0.469
m29	0.887		0.266
m30	0.715		0.580
m31	0.653		0.424
m32		0.761	0.476
m33	0.731		0.358
m34	0.750		0.301
m37		0.886	0.285
m38		0.880	0.330
m39	0.763		0.362
m42	0.775		0.261
m45	0.851		0.312
m46	0.700		0.520
m48		0.829	0.359
m49	0.717		0.303
m50	0.706		0.362
m53	0.679		0.344
m54		0.596	0.431
m56	0.866		0.287
m58	0.917		0.214
m59	0.666		0.514
m60	0.648		0.654
m61	0.831		0.292
m62	0.742		0.445
m63	0.846		0.412
m64		0.819	0.324
m65		0.789	0.292
m44	0.634		0.440

fundamental subjects of faith and prayer of Turkey’s Muslim majority, which is titled “Faith and Prayer” (F&P). These 14 items load 0.596–0.886 on their factor and explain 22.1% of the variance. The two-factor structure obtained explains 61% of the total variance. It was determined that there is a positive and significant relationship ( $r = 0.66$ ) between the two factors. This result justified the decision to use an oblique rotation solution rather than an orthogonal solution.

### **Reliability of the Scale**

To determine the internal consistency of the scale, Cronbach Alpha, McDonald’s Omega, and Guttman’s Lambda-2 were calculated based on the responses of 1,573 university students to all 40 items (Table 3). All results for two factors (or subscales) ranged from 0.95 to 0.97. This is an indication of a high inter-item consistency.



**Table 3:** Results of reliability

Factors	Cronbach Alpha	Guttman's Lambda-2	McDonald's Omega
Factor I	0.975	0.976	0.976
Factor II	0.952	0.952	0.952

## 4.4 Study 3 – Confirmatory Factor Analysis and Measurement Invariance

### 4.4.1 Confirmatory Factor Analysis

#### *Method*

The purpose of Study 3 was to conduct a confirmatory factor analysis (CFA) with a new sample to further verify the factor structure of the Secularity Scale derived from EFA. For CFA, the aim was to reach a higher number than the sample of EFA. The reason for this was to increase the likelihood of achieving a more robust and powerful factor structure with the increase in the number of samples.<sup>86</sup> The second reason was to reach a large enough number of samples to test the scale's structure among diverse groups. Scale studies are typically conducted using samples that reflect a specific group<sup>87</sup> or measurement invariance is not analysed despite being conducted with different groups.<sup>88</sup> In the present study, the structure of the scale will be tested in different groups based on gender, nationality, age, place of residence, and educational background.

For a more diverse sample, a multifaceted approach to participant recruitment was employed. Cutting and Walsh suggest asking undergraduates to invite their parents and grandparents to participate in order to reach more diverse groups.<sup>89</sup> In this context, the purpose of the study was explained in detail to a group of students from the Faculty of Arts and Sciences at a university in Central Anatolia, and they were asked to include individuals from their own extended families of various educational levels and ages. Approximately 150 students collected data for the present study from their immediate circle and received course credit for it. In addition, WhatsApp groups and social media platforms were used to reach a large audience through personal networks. On the other hand, in order to contact international Muslim students, academics who teach those students' courses as well as the International Relations Office of the university were contacted. An official request was submitted to the International Relations Office for the questionnaire to be sent to foreign students.

#### *Participants*

As a result of the processes carried out for data collection, data were acquired from 4,750 individuals. However, 99 of these individuals were excluded from the study because they answered the attention question ( $7 + 4 = ?$ ) incorrectly, while another 260 were also excluded because they were under the age of 18 years.<sup>90</sup> As a result, CFA was conducted with a sample of 4,391 participants. The youngest of the participants was 18 years old, while the oldest was 76 years old. The mean age of the participants ( $n = 4,391$ ) was 25.48 years ( $\pm 8.316$ ). Females made up 69.6% of the sample ( $n = 3,057$ ), males made up 29% ( $n = 1,273$ ), and those who did not wish to specify their gender made up 1.4% ( $n = 61$ ). Turkish citizens made up 96.1% of the sample ( $n = 4,221$ ), while

<sup>86</sup> DeVellis, *Scale Development*.

<sup>87</sup> Aflakseir and Coleman, "Religious Coping Scale;" Alghorani, "Measure of Islamic Religiosity;" Khodadady and Dastgahian, "Religious Orientation Scale;" Khodayarifard et al., "Abrahamic Religiosity Scale;" Krauss et al., "Adaptation of a Muslim Religiosity Scale;" Olufadi, "MUDRAS."

<sup>88</sup> AlMarri et al., "Muslim Practice and Belief Scale;" Jana-Masri and Priester, "Qur'an-Based Instrument;" Khan, "Muslim Religiosity Scale."

<sup>89</sup> Cutting and Walsh, "Religiosity Scales," 146.

<sup>90</sup> This error was made by researcher because the age limit was not specified in the inventory itself or the environments wherein the inventory was shared.

foreign nationals made up 3.9% ( $n = 170$ ). University students – at the time of the study – constituted 51.5% of the sample ( $n = 2,263$ ), while 25.5% of the participants were university graduates ( $n = 1,123$ ), and 22.8% were adults without any university education ( $n = 1,005$ ). A total of 63.3% of the participants ( $n = 2,781$ ) lived in cities for the most of their lives, while 26.7% lived in rural areas ( $n = 1,610$ ).

### Data Analysis

For CFA, the Lavaan package in the R software was utilized. Besides, since multivariate normality could not be achieved, Robust Maximum Likelihood estimation was used.<sup>91</sup> To test the model's fit, five fit indices were employed: the chi-square (CMIN/DF), the comparative fit index (CFI), the Tucker–Lewis Index (TLI), the root mean square error of approximation (RMSEA), and the standardized root-mean-residual (SRMR). However, since the CMIN/DF statistic tended to be impacted by the sample size and virtually always produced insignificant results even when the other fit indices were flawless,<sup>92</sup> it was left out of the fit indices. For other fit indices, the criteria determined based on the relevant literature can be listed as follows: a value of above 0.90 for TLI and CFI was considered good, while a value of above 0.95 was considered exceptional.<sup>93</sup> On the other hand, an RMSEA value of less than 0.08 was considered indicative of an adequate fit model, while an SRMR of less than 0.05 was considered evidence of a good fit.<sup>94</sup>

### Results

As a result of the first analysis, the index values of the 40-item double factor model were determined as follows: CFI: 0.907, TLI: 0.901, RMSEA: 0.65, and SRMR: 0.45. Although the fit indices were found to be satisfactory, it was decided that certain items be removed in order to improve the scale's fit index values and display a more economical scale. When the modifications proposed by Lavaan were investigated, high modification coefficients were observed among 12 items. When the items were examined, it was discovered that each item is similar in theme to another one. Thus, items<sup>95</sup> with low factor loading values, i.e. 30, 50, 27, 63, 28 and 34, were removed from the scale.

Once these items were removed, CFI and TLI increased to 0.933 and 0.928, respectively, while RMSEA and SRMR declined to 0.060 and 0.041, respectively. Following this, items<sup>96</sup> 9, 46, 16, and 59 were also excluded from the scale since their factor loading values were less than 0.7. However, items<sup>97</sup> 32 and 5 were kept in the scale for content validity despite loading values of less than 0.7. In this case, the new emerging values for CFI, TLI, RMSEA, and SRMR were 0.940, 0.935, 0.062, and 0.043, respectively. Subtraction was made based on indices because these values did not have a perfect fit. With the exclusion of items<sup>98</sup> 13, 8, 29, 18 and 61 from the scale, both the fit indexes reached a level that could be deemed very good for CFI and TLI, while the scope and economy of the scale reached a satisfactory level (Table 4).

<sup>91</sup> Oulali et al., "Religious Collective Self-Esteem Scale;" Tabachnick and Fidell, *Using Multivariate Statistics*.

<sup>92</sup> Bentler and Bonett, "The Analysis of Covariance Structures;" Byrne, *Structural Equation Modeling*.

<sup>93</sup> Hu and Bentler, "Cutoff Criteria;" Quintana and Maxwell, "Structural Equation Modeling."

<sup>94</sup> Byrne, *A Primer of LISREL*.

<sup>95</sup> 30 (I can be friends with a homosexual person), 50. (Partners can live together before marriage), 27. (I pray in the times I feel helpless), 63. (My religious belief influences my vote), 28. (The Qur'an should be recited for the spirit of those who passed away), 34. (I would want my daughter to wear hijab.)

<sup>96</sup> 9 (I skip obscene scenes in the series and movies I watch), 46. (I participate in the works of religious foundations, associations or groups), 16. (There is life after death), 59. (The increase in blasphemous behaviour causes earthquakes and other similar disasters).

<sup>97</sup> 32 (I take refuge in a higher power when I feel helpless), 5. (I recite Bismillah prior to all my endeavours).

<sup>98</sup> 13 (I do not use alcohol due to my faith), 8. (I believe that prayer protects me from bad incidents), 29. (I prefer places with an Islamic/Conservative concept for holiday), 18. (I do not shake hands with the opposite sex due to my faith), 61. (I do not go to alcoholic environments due to my faith).

**Table 4:** Results of confirmatory factor analysis

	Factor loadings	SE	z	p
<b>Daily life (DL)</b>				
m10	0.702	0.016	64.946	0.000
m22	0.793	0.014	86.552	0.000
m31	0.760	0.015	62.217	0.000
m45	0.811	0.013	96.907	0.000
m14	0.746	0.015	62.148	0.000
m56	0.832	0.013	92.759	0.000
m42	0.868	0.013	101.039	0.000
m44	0.762	0.016	68.881	0.000
m33	0.808	0.014	77.450	0.000
m53	0.839	0.013	86.293	0.000
m58	0.880	0.012	103.632	0.000
m62	0.761	0.014	74.509	0.000
m60	0.470	0.021	33.227	0.000
m39	0.776	0.014	75.684	0.000
m49	0.809	0.014	78.203	0.000
<b>Faith and Prayer (F&amp;P)</b>				
m5	0.738	0.020	34.141	0.000
m6	0.666	0.020	30.346	0.000
m11	0.795	0.021	36.533	0.000
m32	0.709	0.020	33.797	0.000
m37	0.848	0.021	36.775	0.000
m38	0.828	0.021	35.311	0.000
m48	0.825	0.020	39.360	0.000
m54	0.753	0.018	47.021	0.000
m64	0.836	0.022	34.275	0.000
m65	0.862	0.020	44.094	0.000

Fit Indices: CFI: 0.961, TLI: 0.957, RMSEA: 0.053, SRMR: 0.034.

#### 4.4.2 Measurement Invariance

The purpose of testing measurement invariance is to see whether the conceptual interpretation of the same structure is identical in different groups.<sup>99</sup> For this reason, in order to examine measurement invariance according to gender (female–male), nationality (Turkish–foreigner), age (young–not young), place of residence (City/metropolitan–village/town/county), and educational background (university education–no university education), CFA was first performed for each subgroup, where it was observed that acceptable fit values were established in all subgroups (Table 5). Besides, the scale's coefficients belonging to the models examined within the framework of measurement invariance are given in Table 6. Since the  $\Delta$ CFI values range between  $-0.010$  and  $0.000$ , while the  $\Delta$ RMSEA values range between  $-0.001$  and  $0.001$ , the scale can be used for different groups as well.

### 4.5 Study 4 – Convergent Validity and Test–Retest

For the fourth study, data were collected in two instances. A total of 555 individuals were reached in the first phase of data collection, and convergent validity was carried out. After 6 weeks, 138 of the 555 participants were contacted again, and the test–retest was checked.

<sup>99</sup> Van de Schoot et al., “Testing Measurement Invariance.”

**Table 5:** CFA fit indices according to gender, nationality, age, place of residence, and educational background

	CFI	TLI	RMSEA	SRMR
<b>Gender</b>				
Woman	0.959	0.956	0.054	0.034
Man	0.958	0.954	0.055	0.041
<b>Nationality</b>				
Turkish	0.962	0.958	0.053	0.034
Others	0.905	0.896	0.075	0.060
<b>Age</b>				
Young (18–39)	0.960	0.957	0.053	0.034
Not young (40–100)	0.950	0.946	0.063	0.043
<b>Place of residence</b>				
City/Metropolitan	0.960	0.957	0.054	0.034
Village/Town/County	0.959	0.955	0.053	0.036
<b>Educational background</b>				
Student or graduate	0.960	0.957	0.054	0.034
No university background	0.954	0.950	0.052	0.043

**Table 6:** Results of measurement invariance

	CFI	$\Delta$ CFI	RMSEA	$\Delta$ RMSEA
<b>Gender</b>				
Configural	0.957	—	0.056	—
Weak	0.956	–0.001	0.055	–0.001
Strong	0.951	–0.005	0.056	0.001
Strict	0.941	–0.010	0.06	0.004
<b>Nationality</b>				
Configural	0.96	—	0.054	—
Weak	0.959	–0.001	0.053	–0.001
Strong	0.958	–0.001	0.053	0.000
Strict	0.957	–0.001	0.052	–0.001
<b>Age</b>				
Configural	0.96	—	0.054	—
Weak	0.96	0.000	0.053	–0.001
Strong	0.957	–0.003	0.054	0.001
Strict	0.956	–0.001	0.053	–0.001
<b>Place of residence</b>				
Configural	0.96	—	0.054	—
Weak	0.96	0.000	0.053	–0.001
Strong	0.959	–0.001	0.052	–0.001
Strict	0.956	–0.003	0.053	0.001
<b>University</b>				
Configural	0.959	—	0.054	—
Weak	0.959	0.000	0.053	–0.001
Strong	0.956	–0.003	0.053	0.000
Strict	0.949	–0.007	0.056	0.003

### 4.5.1 Convergent Validity

Convergent validity is an analysis performed to determine how closely a measurement correlates with other scales that measure the same or similar construct.<sup>100</sup> In this regard, the aim of study 4 was to establish the convergent validity for the Secularity Scale by finding the correlations between the Secularity Scale and the Religious Commitment Inventory - 10 (RCI-10),<sup>101</sup> which was developed to measure the extent to which an individual adheres to their religious beliefs, values, and practices. According to the confirmatory factor analysis of the RCI-10, two-dimensional model produces a good fit ( $\chi^2 = 109.33$ ,  $sd = 26$ ,  $RMSEA = 0.093$ ,  $GFI = 0.94$ , and  $SRMR = 0.053$ ). The first dimension of the scale is titled “Intrapersonal Religious Commitment (IRC),” while the second dimension is titled “Interpersonal Commitment (IC)”. The factor loading values of the scale range between 0.43 and 0.78. Responses are given on a 5-point rating scale ranging from 1, indicating “not at all true of me” to 5 “totally true of me.” Higher scores indicate a higher commitment to the acts detailed in the religion.

#### **Method**

In order to contact the participants, a post was published on social media platforms where it was announced that participants were being sought for an academic study without exposing the study’s contents. The post was also shared in the researchers’ WhatsApp groups with request that it be shared with others. In addition, approximately 50 students participated in the study alongside their family members in return for an incentive.

#### **Participants**

Eighteen of the 555 participants who completed the questionnaire were excluded from the data set for incorrectly answering the attention questions (“7 + 8 = ?” and “Please mark the largest number”), and 8 were excluded because they were under the age of 18. The youngest of the remaining 529 individuals was 18 years old, while the oldest was 68. The mean age of the participants ( $n = 529$ ) was 30.29 years ( $\pm 10.606$ ). Females made up 59.7% of the sample ( $n = 316$ ), males made up 40.1% ( $n = 212$ ), and those who did not wish to specify their gender made up 0.22% ( $n = 1$ ). A total of 83.3% of the sample ( $n = 441$ ) were university students or graduates, 10.6% were high school graduates ( $n = 56$ ), 2.5% were secondary school graduates ( $n = 13$ ), 3% were elementary school graduates ( $n = 16$ ), and 0.6% were literate ( $n = 3$ ).

#### **Data Analysis and Results**

The participants’ scores from two different scales were examined by calculating their Pearson correlation coefficient using the SPSS Statistics software. According to analysis, there is a significant and positive relationship between the Daily Life (DL) sub-dimension and the IRC ( $r = 0.86$ ,  $p < 0.01$ ) and the IC ( $r = 0.85$ ,  $p < 0.01$ ) scores. There is also a significant positive correlation between the Faith and Prayer (F&P) sub-dimension and the IRC ( $r = 0.84$ ,  $p < 0.01$ ) and IC ( $r = 0.74$ ,  $p < 0.01$ ) scores. Therefore, it can be stated that the Secularity Scale has convergent validity.

### 4.5.2 Test-Retest

#### **Method and Participants**

In this phase of the study, 138 individuals from group 4 who could be reached were requested to fill out the form again after 6 weeks in order to perform the test–retest. For the purpose of ensuring that they were the

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<sup>100</sup> Churchill, “Marketing Constructs.”

<sup>101</sup> English version: Worthington et al., “The Religious Commitment Inventory–10;” Turkish version: Akın et al., “Dini Bağlılık Ölçeği.”

same individuals who completed the study 6 weeks ago, the subjects were asked to re-enter the code they had previously created in the initial application of the study. Despite the fact that 138 participants correctly answered the attention question ( $5 + 4 = ?$ ), 34 individuals were excluded from the data set since 4 participants did not answer the age question and 30 participants' codes did not match. The youngest of the remaining 104 individuals was 18 years old, while the oldest was 56 years old. The mean age of the participants ( $n = 104$ ) was 25.32 years ( $\pm 8.176$ ). Females made up 76.9% of the sample ( $n = 80$ ), males made up 22.1% ( $n = 23$ ), and those who did not wish to specify their gender made up 1% ( $n = 1$ ). 80.8% of the participants were university students or graduates ( $n = 84$ ), 11.5% were high school graduates ( $n = 12$ ), 4.8% were secondary school graduates ( $n = 5$ ), and 2.92% were elementary school graduates ( $n = 3$ ).

### **Data Analysis and Results**

To allow for a comparison of the participants' scores from the sub-dimensions of the scale at two different time periods, the data of 104 participants were examined by calculating their Pearson Correlation coefficient using the SPSS Statistics software. The results showed that the scale has a high 6-week test–retest reliability ( $r = 0.91$ ,  $p < 0.001$ ), which indicates considerable stability over time. However, there is a difference between the results of the Daily Life dimension of the scale ( $r = 0.89$ ,  $p < 0.001$ ) and those of the Faith and Prayer dimension ( $r = 0.93$ ,  $p < 0.001$ ). This may be due to the fact that subjects concerning both faith and prayer are more cognitive and more frequently repeated.

## **4.6 Study 5 – Discriminant and Known-Group Validities**

To enhance the evaluation of the study's construct validity, new data were gathered to examine its discriminant and known-group validities. According to Campbell and Fiske, a measurement may have discriminant validity if it is not closely associated with measurements from which it is supposed to distinguish itself.<sup>102</sup> Known-group validity, on the other hand, refers to a situation where a group with predetermined characteristics is compared to another group, with the outcomes aligning with likely expectations.<sup>103</sup>

To assess the discriminant validity of the scale, a study was carried out using a measurement tool that focused on “kindness” and “compassion.” As previously mentioned, certain scale studies<sup>104</sup> consider being a morally upright person as one of the indicators of religiosity. This study, however, posits that the association between these types of issues and the degree of de/secularity should not be high. The Lovingkindness-Compassion Scale,<sup>105</sup> upon which Turkish validity and reliability studies had been conducted,<sup>106</sup> was utilized in the study. The scale has three sub-dimensions: self-centeredness, compassion, and lovingkindness.

To evaluate the known-group validity of the Secularity Scale, I conducted independent sample *t*-tests to compare the scores of individuals who attended or graduated from a faculty of theology with those who did not pursue studies at such a faculty. Since individuals who opt for a theology faculty might typically lead less secular lifestyles, the hypothesis is that those who attend a theology faculty are expected to be less secular compared to other groups.

### **Method**

In this study, participants were selected using a convenience sampling method. I reached out to individuals who were either studying at or graduated from a theology faculty by collaborating with academics from five

<sup>102</sup> Campbell and Fiske, “Multitrait-Multimethod Matrix.”

<sup>103</sup> DeVellis, *Scale Development*.

<sup>104</sup> Al Zaben et al., “The Muslim Religiosity Scale;” Khodadady and Dastgahian, “Religious Orientation Scale;” Mahudin et al., “Religiosity among Muslims;” Olufadi, “MUDRAS.”

<sup>105</sup> Cho et al., “LovingKindness-Compassion Scale.”

<sup>106</sup> Sarıçam and Erdemir, “[LovingKindness Compassion Scale Turkish Version].”



different universities.<sup>107</sup> For those who were not enrolled in a theology faculty, data collection was conducted among students majoring in sociology and international relations at three universities.<sup>108</sup> The post was also shared in the researcher's WhatsApp groups with request that it be shared with others.

### **Participants**

Six of the 282 participants who completed the questionnaire were excluded from the data set for incorrectly answering the attention questions ("5 + 12 = ?" and "What's the capital city of Turkey"), and two were excluded because they were under the age of 18. The youngest of the remaining 274 individuals was 18 years old, while the oldest was 65. The mean age of the participants ( $n = 274$ ) was 27.17 years ( $\pm 9.074$ ). Females made up 67.8% of the sample ( $n = 185$ ), males made up 32.1% ( $n = 88$ ), while those who did not wish to specify their gender made up 0.4% ( $n = 1$ ). Out of the total sample, individuals who were either studying at or had graduated from a faculty of theology constituted 60.2% ( $n = 165$ ), while the remaining 39.8% ( $n = 109$ ) were from other educational backgrounds.

### **Data Analysis and Results**

To assess discriminant validity, the Pearson correlation coefficients were calculated between participants' scores from two different scales using the SPSS Statistics software. The analysis revealed that there were low correlations between the Secularity Scale and self-centeredness ( $r = 0.16$ ,  $p = 0.007$ ), compassion ( $r = 0.21$ ,  $p < 0.001$ ), and lovingkindness ( $r = 0.38$ ,  $p < 0.001$ ) sub-dimensions. Therefore, it can be concluded that the Secularity Scale demonstrates discriminant validity.

A Welch  $t$ -test was conducted to assess known-group validity by comparing the mean scores of the two groups (whether registered in a theology faculty or not) on the Secularity Scale. It was found that the first group (comprising individuals who were studying at or had graduated from a faculty of theology) was less secular compared to those not associated with any theology faculty. The results were similar for both the total score ( $t(158.26) = 11.40$ ,  $p < 0.001$ ) and the sub-dimensions of the scale: Daily Life ( $t(177.74) = 11.80$ ,  $p < 0.001$ ) and Faith and Prayer ( $t(137.59) = 9.52$ ,  $p < 0.001$ ). Thus, the expected difference between these groups provided support for the known-group validity of the Secularity Scale (Appendix A).

## **5 Discussion**

Basically, five studies were carried out to test the scale's reliability and validity. The results reveal that the study has strong psychometric properties. However, there are some points that need to be discussed related to the content and the structure of the study.

It should be emphasized that although items related to several supernatural narratives (folk beliefs, astrology, or spirituality) were included in the item pool, they were not included in the scale. One of the main reasons for this may be specified as the change that occurred as a result of urbanization. Folk beliefs found largely in rural culture are likely to diminish in daily life in a country where 92% of the population now live in cities.<sup>109</sup> I am of the opinion that the absence of astrology-related items in the scale has to do with the fact that astrology is not a strong enough dynamic in shaping daily life. The claim here is not that the number of individuals interested in astrology is low, or that people are not curious about their astrological signs. On the

<sup>107</sup> University of Aksaray, University of Selçuk, University of Siirt, University of Amasya, University of Çukurova.

<sup>108</sup> Adana Alparslan Türkeş Science and Technology University, Karamanoğlu Mehmet Bey University, and Aksaray University.

<sup>109</sup> Turkish Statistical Institute, "Address Based Population."

contrary, astrology and zodiac signs in particular continue to serve as topics of daily conversations. However, as they do not influence daily life activities in a certain way, it is thought that they are therefore not as distinctive as the other items. A similar situation can be discussed with regard to new religious movements. New religious movements or spiritual trends are used to refute the secularization thesis in the secularization debates centred in Western Europe and North America.<sup>110</sup> These elements are used to refer to various trends that pledge an exuberant religious, spiritual, and philosophical lifestyle in their discourse, most of which emerged after the 1960s and began to attract significant attention starting from the 1970s.<sup>111</sup> Nevertheless, Turkey did not witness the emergence of any novel religious or spiritual movement that originated outside of monotheistic religions and significantly impacted large populations. As a result, it might be argued that these reasons may have played a role behind the low discrimination levels of the items related to other supernatural topics.

One of the main features that distinguish this scale from other religiosity scales is that this scale did not emerge as a result of an essentialist approach towards Islam. Since secularity does not possess a scope that is independent of time and place, any behavioural pattern that has been included in the form of secularity for a certain period may lose its distinctiveness for the same society in a different time period. For this reason, while the scales produced based on a single interpretation of Islam or the Qur'an claim that there actually is a single understanding of Islam, the scale in the present study was developed in terms of the impact of supernatural realm on social life.

The other aspect that sets it apart from other religiosity scales is its emphasis on the dimension of daily life. When it comes to Turkey or any other country with a Muslim majority, the inclusion of matters related to daily life (such as individuals' partner selection, dining culture, holiday perception, selection of schools to send their children to, alcohol consumption, approach to premarital sexuality, dress codes, use of interest, etc.) might allow for a more in-depth examination of secularity, as is the case in the present scale. This major emphasis on the daily life dimension issued from the definitions of the concept of secularity/secularizations as the diminished influence of the supernatural realm in social life, which is not the same thing as the supernatural abandoning individual lives completely. Individuals may continue to have beliefs while distancing themselves from the rituals and practices that are brought on by their beliefs. Since secularization and dereligionization do not correspond to the same concept, having/not having faith should not be the most important criterion in secularity scales. In addition, the rate or frequency of prayer should not be considered as the main determinant as well. Just as individuals do not have to lose their faith while being secularized, they can also regularly attend church, have their children baptized, celebrate thanksgiving in crowded and sentient atmospheres, perform the salaah, fast, go on pilgrimage, and perform other forms of religious rituals. As can be seen, individuals who have faith in a supernatural power or religion, or regularly perform their religious duties, need not be isolated from secularization debates. For this reason, the development of secularity scales for other faith communities should be developed particularly by researchers with inside knowledge of the daily life practices of those communities.

Last but not least, the fact that daily life and the supernatural domain are at the centre of the scale prevents "one-and-a-half barrelled items," which Cragun et al. encountered in many other religiosity scales, from posing a problem to measurement. Cragun et al. rightly argue that commonly used religiosity scales contain "one-and-a-half barrelled items" that cannot be answered by non-religious people.<sup>112</sup> For example, the item "My personal religious beliefs are very important to me"<sup>113</sup> "assumes that respondents hold religious beliefs and that these beliefs are either very important, somewhat important, or not that important to respondents."<sup>114</sup> However, such questions are likely to be less problematic for secularity debates. This is because both believers and non-believers who check the "strongly disagree" option on the secularity scale

<sup>110</sup> Stark, "Secularization, R.I.P."

<sup>111</sup> Barker, "New Religious Movements," 16–8.

<sup>112</sup> Cragun et al., "The Nonreligious–Nonspiritual Scale," 37.

<sup>113</sup> Cohen et al., "Religious Beliefs."

<sup>114</sup> Cragun et al., "The Nonreligious–Nonspiritual Scale," 37.

exhibit a secular attitude regarding that particular question. When it comes to measuring secularity “one-and-a-half barrelled items” do not make any difference in terms of the outcomes.

## 6 Limitations

First and foremost, it should be emphasized that all of the studies for the Secularity Scale were conducted within a single country. In other words, the scale could not account for cultural and geographic variances. In practice, conducting all five of these studies in a large-scale cross-cultural environment could aid in the production of more robust results. Secondly, only 170 international students could be reached, and these were individuals with sufficient socioeconomic standards to come to Turkey for educational purposes. Therefore, many Muslim-majority countries (and the languages spoken in those countries) with diverse everyday life experiences could not be included in the present study. As a result, the question of whether this scale can also be used in other Muslim-majority countries remains unanswered. A replication of the study in other Muslim societies would allow for a better understanding of its cross-cultural strength.

Another limitation of the present study is the high convergent validity exhibited by the Secularity Scale developed on the Religious Commitment Inventory - 10 (RCI-10). When the theoretical framework of the study is taken into consideration, such a result means the following: Islam is still the most important representative of the supernatural realm in Turkey and continues to influence daily life. When the IRC-10 scale is examined closely, it will be seen that the 2 items in the IRC-10 are similar to the Secularity Scale.

IRC-10		Secularity scale	
<b>Item 1</b>	I often read books and magazines about my faith	<b>Item 14</b>	I follow publications related to my religious belief [television, newspaper, radio, social media, YouTube, and others
<b>Item 2</b>	I make financial contributions to my religious organization	<b>Item 62</b>	If I am to donate to a foundation, I prefer one with religious roots

However, the remaining 8 items of the IRC-10 were not included even in the item pool due to the rationale on which the present study was based. For example, items in RCI-10 such as item 10 (I keep well informed about my local religious group and have some influence in its decisions), item 8 (It is important to me to spend periods of time in private religious thought and reflection), or item 6 (I enjoy spending time with others of my religious affiliation) are not determinative for secularity debates. That is because individuals may exhibit highly desecular daily life practices without being in any interaction with the religious group(s) in their environment. Similarly, ruminating about religious subjects may not mean that the individual will give much place to religion in their daily life activities, or a highly desecular lifestyle can be adopted without ruminating about religious subjects. On the other hand, individuals can have desecular daily life practices without spending time with their coreligionists. Furthermore, particularly among Muslims in Turkey, *takfirism* is very common, i.e. it is quite common among Muslims that many Islamic groups accuse each other of being irreligious. Therefore, those who enjoy spending time with their coreligionists do not necessarily have high religious sensitivities at other points in their lives. However, although the rationales of the two scales differ from each other, due to the high convergent validity, our article, ideally, should have had another study which demonstrates that the Secularity Scale adds predictive or explanatory ability to the discussions.

Another limitation concerns the disparity in sample groups obtained in EFA and CFA. While the group of 1,573 individuals reached for EFA was entirely made up of university students, the group of 4,391 people reached for CFA included university students, adults, and those without a university education. For a more

robust study, individuals from various socio-economic strata should have been included in the EFA as well. However, this could not be actualized as the idea of reaching a larger audience only emerged later in the study.

The text should be evaluated by taking these limitations into account.

## 7 Implication and Conclusion

The present study is intended to contribute to the secularization debates that have generally been neglected when it comes to Muslim communities. The main purpose of the present study was to develop a psychometrically sound and quick to apply scale that can be used to measure the degree of secularity among Muslims. The scale has a total of 25 items. The scale's items 1 (m60) and 13 (m10) were reverse-scored. Since the scale offers a five-point Likert-type rating, the maximum score that can be acquired is 125, and the minimum score is 25. As the scores obtained from the scale increase, it should be interpreted in terms of the supernatural realm having more impact on the daily life of individuals, that is, they are more desecular compared to others. I wanted to determine identities such as "ultra-secular," "secular," "mixed identity," "desecular," and "ultra-desecular" based on the scores obtained from the study. However, I did not express an identity based on any score, as I thought that this was not compatible with the theoretical framework of the study. This is because for the secularization debates, it is necessary to make comparisons with others or with one's own history rather than absolute values. Therefore, let's say an individual scores 95 on the scale and this score actually indicates that he/she belongs to a "desecular" culture (95/25: 3.8). However, if their parents scored higher than them, or if the person scored higher than 95 on the same scale at some time in the past, then we can say they are more secular than in the past, even though the supernatural realm is very much interfering in their lives at present. For this very reason, I think it would be preferable to use expressions such as "more secular" or "less secular" when comparing with others or with a time period in history, rather than using absolute terms such as secular/desecular, ultra-secular/ultra-desecular based on the scoring of the scale.

So where can this scale be used? Although secularization debates have dominated Christian-centred literature since the 1960s, these debates are still in their infancy in Muslim-majority societies. This is why the main purpose of developing this scale is to take the secularization debates among Muslims to a new level. In particular, comparing generations or conducting longitudinal studies using the Secularity Scale can help uncover data-based studies that are missing from the secularization debates in the Muslim world. In addition, the degree and trajectory of secularity among Muslims who have migrated (forcibly or not), are refugees, or are expatriates in other countries have the potential to become an invaluable data source. Comparisons between Muslims in Western Europe and North America and Muslims in the Middle East and Africa, in particular, can be eye-opening for many social science debates. Be that as it may, some details should be considered when translating the scale into other languages. As stated by Werner and Campbell, cultural appropriateness should be ensured in cross-cultural studies prior to translation by choosing culturally suitable terminology or expressions.<sup>115</sup> Cultural insensitivity and the omission of essential aspects of religious cultural traditions may prevent a robust study from being carried out.<sup>116</sup> For this reason, when translating the scale into different languages, cultural differences should be taken into account.

Apart from sociology of religion, this scale can be utilized in a variety of social scientific domains as well. The scale has the potential to be used extensively, particularly in the fields of psychology of religion and social psychology. Although social scientists have extensively studied the impact of religion on the lives of individuals in terms of various phenomena and dimensions of life, the direct positive or negative impact of secularity on these variables has been overlooked. For this reason, it is an important requirement for the literature that studies using religiosity scales should also be undertaken using the Secularity Scale. Furthermore, the Secularity Scale has the potential to aid our understanding of how supernatural teachings are linked to various behavioural patterns throughout different instances in life. Thus, examining how

<sup>115</sup> Werner and Campbell, "Translating."

<sup>116</sup> Hill, "Issues in the Psychology of Religion."

secularity manifests itself might be useful in describing, predicting, and explaining how individuals act in a variety of contexts. The findings have the potential to spark major debates, particularly on universal moral problems such as women's rights, children's rights, gender equality, and animal rights. In addition, while many studies have been conducted on the relationship between life satisfaction and religiosity, whereas examining the relationship between life satisfaction and secularization, as Pöhls suggests, may allow for a more detailed discussion of the points that the classical line of research has been missing.<sup>117</sup>

In both Western and Muslim societies, secularity has often been coded as the “mere absence of religiosity,” neglecting the fact that individuals in secular cultures may also have their own value systems, and that secularity may also have its own principles or code of ethics. Recently, Coleman et al. have argued against this approach and claimed that studies should be conducted with the acknowledgement that non-religious people have their own behaviours, worldviews, and values.<sup>118</sup> For example, looking at the relationship between secularity and traits such as egalitarian/liberal values, general intelligence, analytical thinking, reasoning skills, less dogmatic thinking, and the likelihood of thinking flexibly,<sup>119</sup> which were all found to be more prominent among non-religious people in the Western literature, Muslim-majority countries can indeed contribute to the debates carried out by these scholars with data pertaining to Muslims, just as they suggested.<sup>120</sup>

Last but not least, since the present study took place in Turkey in 2020–23, the scale's items encompass the most pressing issues in the country at the time. In order for a behavioural pattern to be defined within the secularity debates, it is necessary for it to be based on a common tradition and identified by a common environment that encompasses social values and practices.<sup>121</sup> These values and practices are also affected by the spirit of the time as well as the place in which they emerged. Therefore, secularity does not have a scope that is independent of time and place. That is to say, a behavioural pattern included in the form of desecularity belonging to a certain period and community may cease to serve as an indication of desecularity in a different time period, even for the same community. It does not seem possible to carry out secularity debates independently of context, history, daily life, and the dominant culture. Therefore, particularly when developing secularity scales, attention should be paid to the time, place, and context, wherein such scales are developed. Finally, the validity and reliability studies of this scale should be repeated at different times, and, more importantly, evaluated with possible new items (if necessary, such as sperm banks, raising a child without a father, etc.) in the coming years.

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<sup>117</sup> Pöhls, “A Complex Simplicity.”

<sup>118</sup> Coleman III and Jong, “Counting the Nonreligious;” Uzarevic and Coleman, “The Psychology of Nonbelievers.”

<sup>119</sup> For a detailed discussion on the relationship between these traits and non-religiosity, see Uzarevic and Coleman, “The Psychology of Nonbelievers,” 20.

<sup>120</sup> Uzarevic and Coleman, “The Psychology of Nonbelievers,” 134.

<sup>121</sup> Dawson, *Religion and Culture*.



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## Appendix A

**Table A1:** Secularity Scale

	Strongly disagree	Disagree	Somewhat agree	Agree	Strongly Agree
	1	2	3	4	5
<b>Factor 1 (Daily Life)</b>					
m10	Unmarried couples can go on vacations together*				
m22	It is important for me that people who run the state are religious				
m31	I would like my child to attend a school where s/he can also receive religious education				
m45	I don't shop from places that sell alcohol because of my faith				
m14	I follow publications related to my religious belief (television, newspaper, radio, social media groups, YouTube, and others)				
m56	I try not to wear tight clothes because of my faith				
m42	Because of my faith, I believe that there should be separate swimming pools for men and women				
m44	Because of my faith, interest-free banking institutions should be preferred				
m33	I would give my child a name that is related to my faith				
m53	I prefer my friends to be religious				
m58	For vacations, I prefer places that are suitable with my faith				
m62	If I am to donate to a foundation, I prefer one with religious roots				
m60	I wouldn't mind being neighbours with a gay couple*				
m39	Because of my faith, I prefer that men and women stay in separate rooms in social gatherings				
m49	Women should wear a headscarf				
<b>Factor 2 (Faith &amp; Prayer)</b>					
m5	I recite bismillah prior to all my endeavours				
m6	I would like to be buried according to religious rules				
m11	I fast				
m32	I take refuge in a higher power when I feel helpless				
m37	I believe that both good and evil come from Allah.				
m38	If my financial situation allows, I participate in Eid al- Adha (qurban)				
m48	People will face the consequences of their actions in the afterworld				
m54	I pray during the holy nights				
m64	Qur'an is a flawless book				
m65	If my financial situation allows, I would go to Hajj				

\* Reverse scored.