Sentiment Analysis of a Translated Text of the Qur'ān Using the Pareto Principle

MOSTAFA ESSAM EISSA[*]

Abstract

Islamic scholars have made several efforts to translate the Qur'ān into various languages of the world, with English being the most prominent target language. This article uses textual analysis to study translated verses of the Qur'ān and shows that the predominant result of subjectivity analysis was objectivity by a contribution of 63% with a preponderant non-ironic tone. There is a close balance between the topic categories of entity and concept in the sentiment analysis and agreement in different textual elements polarity of 72% unipolarity. Interestingly, the verses with positive polarity outweigh those with negative polarity, with a significant number of verses reflecting non-polar texts. A topic sentiment analysis of the verses showed the prevalence of non-polarity over the positive, negative, neutral, strong positive, then strong negative polarity. Sūrat al-Baqarah holds the greatest polarity count. This investigation paves the way for a series of in-depth analyses for the examination of religious texts. Also, it sheds light on the necessity of the control of the language translation of verses to deliver the same or close impression to that of the original religious text. Refinement of the text analysis algorithm may be required in the quality control of the translation. Nevertheless, the current study provides direct evidence of the future ability of this type of program to derive conclusions from religious texts in an acceptable manner.

Keywords

Qur'ān, translation, sentiment analysis, Pareto chart, polarity.

1 Introduction

Modern Islamic scholars have worked tirelessly to translate the Qur'ān into languages spoken across the globe, with English being one of the most prominent target languages.[1] The hunt for quick and efficient ways to study texts and speeches has become crucial in a rapidly changing

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[*] Independent Researcher based in Cairo, Egypt.

[1] "Quran Excel," accessed November 3, 2022, https://quranexcel.org/downloads/excel-files/quran-wbw.

environment, with an abundance of information flow and an unceasing stream of technological development.

Currently, Islam is the world's second-largest religion by population, following Christianity. More than 24% of the world's population, or approximately 1.8 billion people, identify themselves as Muslims.[2] As a result, the dissemination of Islamic texts to non-Arabic speakers is a challenging task in terms of maintaining the same sentiment quality, with textual mining techniques acting as an important quality control tool.

In Islamic theology, translating the Qur'ān from Arabic into other languages has always been challenging.[3] Muslims believe that the Qur'ānic text should not be separated from its original language or written form, at least not without maintaining the Arabic text along with it, because they consider the Qur'ān as miraculous and unique (*mu'jiz*).[4] An exact translation is further complicated by the fact that an Arabic word may have a variety of meanings depending on the context—a quality shared by all Semitic languages, as opposed to English, Latin, and Romance languages.[5]

Hence, studying the impression that the translated texts of the Qur'ān leave on readers of foreign languages is of paramount importance to anticipate the impact that it may leave. Since the Qur'ān is rich with literary meanings, it was decided to study the verses using a textual analysis program, and in our case, here are texts translated into English and divided into an Excel file.[6] The term "textual analysis" is a catch-all for a variety of study techniques used to define, analyse, and comprehend texts. A text can provide a variety of information, including its literal meaning as well as its subtext, symbols, assumptions, and ideals. Modern technology has proven the importance of textual analysis in employing artificial intelligence to process large amounts of data in a short time, and therefore its use in studying documents and texts is

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[2] Todd M. Johnson and Gina A. Bellofatto, *The World's Religions in Figures: An Introduction to International Religious Demography* (Malden, MA: Wiley-Blackwell, 2013).

[3] Nadia Smaihi, "Translating the Quranic Discourse from Arabic into English: "Peculiarities - Difficulties and Prospects," *El-ihyaa Journal* 19, no. 23 (2019): 765, https://doi.org/10.35553/1699-000-023-032.

[4] Ali Al-Halawani, "Eight-Point Scheme Proposal for Translating the Qur'anic Text," *US-China Education Review A* 6, no. 2 (2016): 91-104, https://doi.org/10.17265/2161-623X/2016.02.002.

[5] Ahmad Al-Jallad, *Arabic in Context: Celebrating 400 Years of Arabic at Leiden University* (Leiden: Brill, 2017).

[6] "Quran Excel."

important in deducing the content included in the sentences. Textual analysis takes the important ideas and their connections out of documents under investigation, automatically classifying and arranging them using Content Management Systems (CMS), Robotic Process Automation (RPA), or any other integration.[7] To enable data-driven methods for content management, text analysis tries to extract machine-readable data from unstructured text. To overcome language difficulties and attain high accuracy for a particular domain, an add-in program integrated with Excel would be examined for the textual investigation and screening of English terms.

2 Foundation for the Analysis of the Qur'ānic Text

The screened language of the translated Qur'ān was identified as English (En.) text with relevance and rank values of 100 and one, respectively. The work focuses on investigating general sentiment analysis in the sections discussed below.

2.1 Outline of Sentiment Analysis for the English Text

The sentiment analysis (SA) feature on the software enables comprehensive multilingual sentiment analysis of texts from many sources, including English. It distinguishes between texts with positive, negative, and neutral polarity, including phrases and texts from different sources.[8] Additionally, sentiment can be extracted at the document or aspect-based level. This is accomplished by identifying the local polarity of the various sentences in the text and assessing how they relate to one another to get a global polarity value for the entire text.[9] Differentiators include the ability to derive sentiment based on an aspect and distinguish between ideas and facts, in addition to the irony and divergent polarities that could be both detected.

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[7] "Text Analytics: MeaningCloud Text Mining Solutions," MeaningCloud, accessed November 3, 2022, https://www.meaningcloud.com/.

[8] Alexandra Balahur and José M. Perea-Ortega, "Sentiment Analysis System Adaptation for Multilingual Processing: The Case of Tweets," *Information Processing & Management* 51, no. 4 (2015): 547–56, https://doi.org/10.1016/j.ipm .2014.10.004.

[9] Jing Tian et al., "Research on Aspect-Level Sentiment Analysis Based on Text Comments," *Symmetry* 14, no. 5 (2022): 1072, https://doi.org/10.3390/sym14051072.

3 Outcome of General Sentiment Analysis of a Qur'ānic Text in English

There are more sentiment analysis options available in the advanced settings tab. Three distinct sections are as follows: analysis type, which lets the user choose the kind of sentiment analysis that is to be performed; document analysis (document-level analysis), which lets the analyst specify which fields to output when analysing the sentiment of a document; and topic analysis (feature-level analysis), which allows for specifying which fields to output when analysing the sentiment of the topics mentioned in a document. Both independent analyses were used in this study and demonstrated in detail using the Pareto principle to focus on the major few contributing factors using Excel combined with Minitab (version 17).

3.1 Global (Document-Level) Sentiment Analysis of a Qur'ānic Text in English

Subjectivity examination of verses in the Qur'ān, in addition to the investigation of agreement and irony levels, is illustrated in Figure 1. The subjectivity factor was found to be 0.37 from the total of 6348 verses including "*Basmalah*." On the other hand, the agreement parameter was estimated to be 0.72 with 1786 verses showing disagreement in polarity. The irony factor was low at 0.01 from the total verses. According to some Islamic authors about subjectivity, since the Qur'ān addresses the human mind, many verses in the Qur'ān deal with several situations related to people's opinions and judgements, as well as perspectives on aspects of life, faith, and resurrection.[10] Thus, some verses handle emotional situations with human beings and the battle between good and evil. Nevertheless, the greater number of the verses showed objective direction as most of the verses dealt with many facts and worldly knowledge as well as laying the foundations and rules of life.

Examples that could be addressed as subjective verses include: "And give good news (O Muhammad) to those who believe in this Book and do good deeds (in accordance with its teachings). For them, there will be gardens underneath which canals flow. Their fruits will so resemble the fruits on the Earth that every time they will be provided with fruits, they will say, 'Such fruits were provided to us before on the Earth.' And there

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[10] Shaykh Muhammad al-Ghazali, *A Thematic Commentary on the Qur'an*, trans. Ashur A. Shamis (Herndon, VA: International Institute of Islamic Thought, 2000), https://doi.org /10.2307/j.ctvh4zgz9.

will be pure spouses for them and therein they will live for ever,"[11] "And if they remonstrate with you, tell them: 'I have submitted my whole being to Allah, and so have those who follow me.' And ask the People of the Book as well as those who follow no heavenly Scripture: 'Have you also submitted (to Allah)?' If they have submitted to Him, they are indeed on the right way but if they deviate from submitting to Allah, then your duty is merely to deliver the message. Allah observes the affairs of His servants,"[12] and "And whoever does this by way of transgression and injustice him shall We surely cast into the Fire; that indeed is quite easy for Allah."[13]

On the other hand, verses with the objective impression that have been identified by the program could be exemplified by the following: "O men! A proof has come to you from your Lord, and We have sent down unto you a clear light,"[14] "Do you not see that Allah makes the night phase into the day and makes the day phase into the night and has subjected the sun and the moon to His will so that each of them is pursuing its course till an appointed time? (Do you not know that) Allah is well aware of all that you do?"[15] "He has the supreme hold over His servants. He is All-Wise, All-Aware,"[16] "We have adorned the lower heaven with the adornment of the stars,"[17] "And then on the Day of Resurrection you shall certainly be raised up,"[18] "He it is Who gave the sun radiance and the moon light, and determined the stages (for the waxing and waning of the moon) that you may learn the calculation of years and the reckoning of time. Allah has created all this with a rightful purpose (rather than out of play). He expounds His signs for the people who know,"[19] and "And He has set other landmarks in the earth. And by the stars too do people find their way."[20]

Disagreement occurs when a verse shows different polarity between its elements. For instance, the verse demonstrated the situations of conflicting viewpoints between sides and statements that pinpoint hazy

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[11] Qur'ān 2:25.

[12] Ibid., 3:20.

[13] Ibid., 4:30.

[14] Ibid., 4:174.

[15] Ibid., 31:29.

[16] Ibid., 6:18.

[17] Ibid., 37:6.

[18] Ibid., 23:16.

[19] Ibid., 10:5.

[20] Ibid., 16:16.

or inconsistent rationalization, thinking, attitudes and arguments of the disbelievers and misguided people.[21] An example of this case can be seen in the following verse: "We have created the heavens and the earth and all that is between them in Truth and for an appointed term. But those who disbelieve have turned away from what they were warned against."[22] The program also identified discussions of opposite circumstances as disagreement as in the following: "And fight in the way of Allah with those who fight against you but do not commit aggression because Allah does not like aggressors."[23]

On the same line, agreement in polarity can be demonstrated in the remaining verses in the usual context such as: "He it is Who created for you all that there is on the Earth; He then turned to the sky and ordered it into seven heavens. And He has full knowledge of everything."[24]

Many verses in the Qur'ān deal with the issue of mockery as harmful human behaviour, and it has been mentioned more than once.[25] One example of irony can be identified in the following verse: "And We gave Moses the Book and sent after him a train of Messengers in succession. Then We sent Jesus, son of Mary, with clear Signs and supported him with the Holy Spirit. Then how is it that whenever a Messenger came to you with that which did not suit your lusts, you grew rebellious against him, and repudiated some and slew others."[26] The screened sections for irony were identified as mockery situations rather than verbal ones, such as verse 2:87 about how the human mind tends to follow desires at the expense of correctness, despite all the efforts made by the Messengers to discipline and nurture mankind. Indeed, the stubbornness might be exceeded to harm those who seek good for humanity.

However, it should be noted that, during the preparation of this article, there were several translations found that deliver the same meanings. This could account for variations in the impressions sensed in the SA between different translations and the original Arabic text which could be related to both phrase expressions and the algorithm of the

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[21] "Belief in the Last Day," accessed November 3, 2022, https://www.azhar.eg/en/Islam /Creed/details1/ArtMID/12164/ArticleID/48710/Belief-in-the-Last-Day.

[22] Qur'ān 46:3.

[23] Ibid., 2:190.

[24] Ibid., 2:29.

[25] Azam Azam, "The Irony Approach in the Qur'an: Mustansir Mir's Perspective," *Academic Journal of Islamic Studies* 5, no. 1 (2020): 21, http://dx.doi.org/10.29240/ajis.v5i1 .1318.

[26] Qur'ān 2:87.

programing codes.[27] Accordingly, the irony analysis might not work accurately and is expected to be different from the original in the Arabic text. This is an area for further investigation and deeper analysis to provide appropriate customization for religious texts.
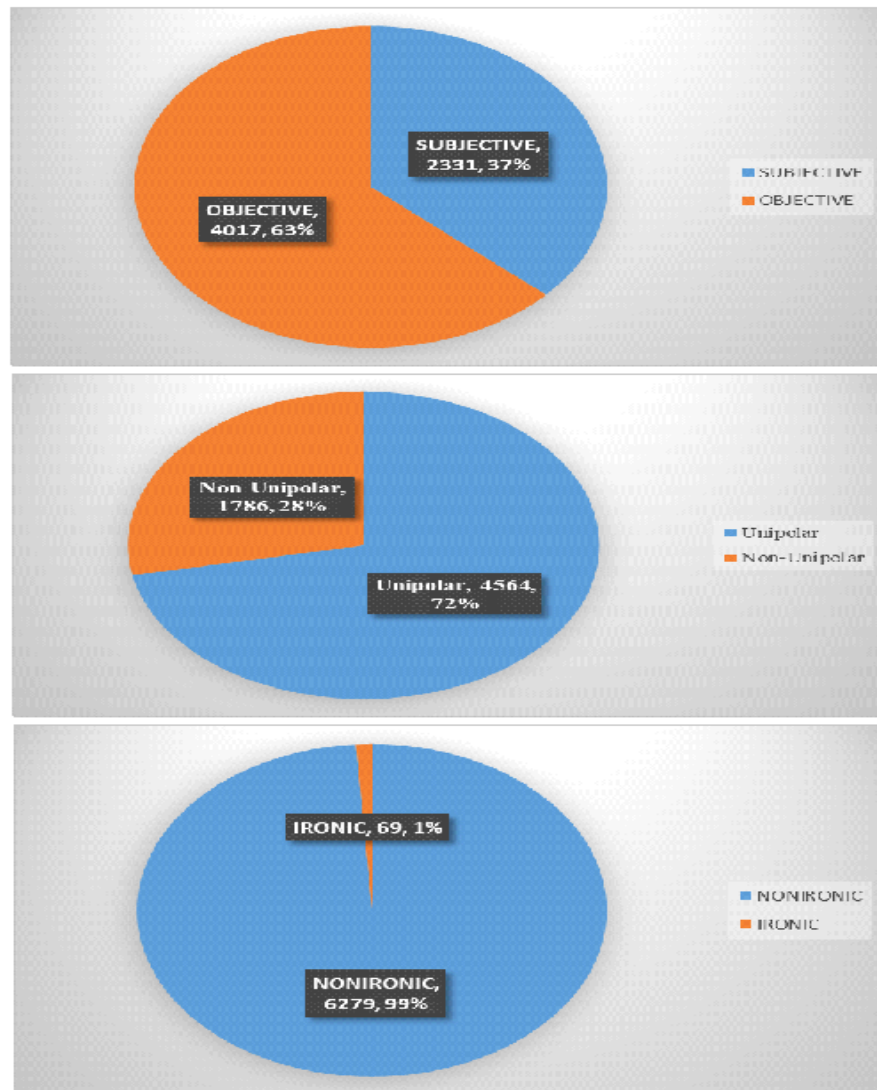

Figure 1: Global sentiment analysis obtained from the net analysis of the individual verse sections regarding subjectivity (upper graph), agreement (middle graph), and irony (lower graph)

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[27] "Fatawa - The Accuracy of the Different Translations of the Quran," accessed November 3, 2022, https://www.dar-alifta.org/Foreign/ViewFatwa.aspx?ID =7806.

An element's sentiment polarity influences the direction of the stated sentiment, i.e., whether the text communicates the reader's positive, negative, or neutral feelings towards the subject of the text.[28] The polarity study showed a pattern of major positivity, followed by a lower count of negativity as major contributors (Figure 2) when counting sentiment polarity from English translated Qur'ān segregated and analysed in cells of the Excel sheet. Table 1 shows the state of the polarity of verses by *sūrah*. Status is either not identified (None) or identified by negative (N), strong negative (N+), positive (P), strong positive (P+) or neutral (Neu).
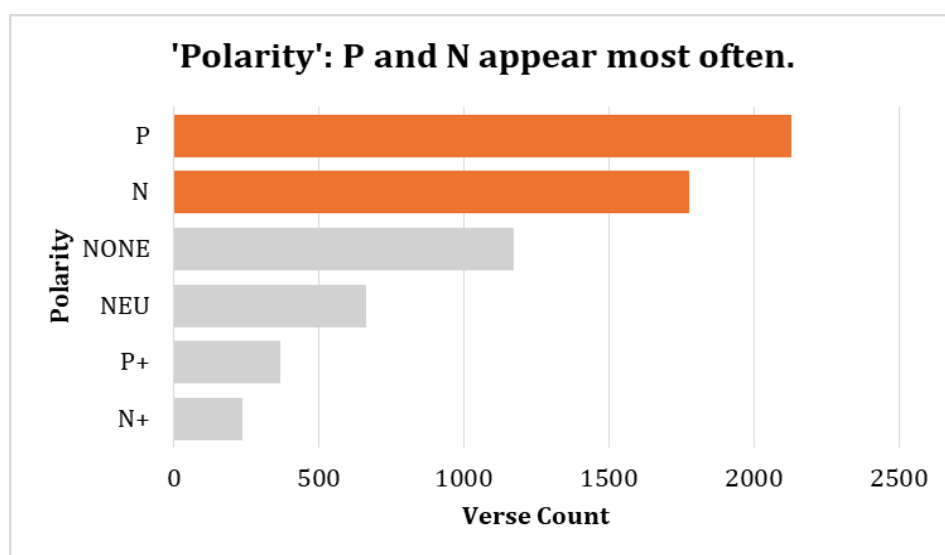
Figure 2: Bar chart showing polarity state count by verses

Count of *Sūrah* Name	Column Labels						
Row Labels	P	N	NONE	NE	P+	N+	Grand Total
Sūrat al-Baqarah	126	83	9	49	15	5	287
Sūrat al-Shu'arā'	52	56	82	13	21	4	228
Sūrat al-A'rāf	73	80	16	29	3	6	207
Sūrat Āl 'Imrān	83	58	9	33	9	9	201
Sūrat al-Ṣaffāt	47	49	63	4	9	11	183
Sūrat al-Nisā'	61	62	10	33	7	4	177
Sūrat al-An'ām	61	53	11	31	6	4	166
Sūrat Ṭā Hā	43	37	37	10	6	3	136

Sūrat al-Tawbah	38	58	4	17	8	4	129
Sūrat al-Naḥl	54	30	11	19	10	5	129
Sūrat Hūd	48	35	11	18	7	5	124
Sūrat al-Mā'idah	43	46	5	20	4	3	121
Sūrat al-Mu'minūn	40	27	33	7	8	4	119
Sūrat al-Anbiyā'	38	35	21	9	6	4	113
Sūrat al-Isrā'	48	31	10	16	4	3	112
Sūrat Yūsuf	51	26	8	15	5	7	112
Sūrat al-Kahf	37	32	18	8	10	6	111
Sūrat Yūnus	43	26	10	20	6	5	110
Sūrat al-Ḥijr	27	29	29	6	4	5	100
Sūrat Maryam	33	25	19	11	5	6	99
Sūrat al-Wāqi'ah	25	18	43	4	4	3	97
Sūrat al-Naml	37	27	12	8	6	4	94
Sūrat al-Zukhruf	33	26	13	7	9	2	90
Sūrat Ṣād	28	25	12	7	13	4	89
Sūrat al-Qaṣaṣ	33	22	9	18	6	1	89
Sūrat Ghāfir	26	30	9	12	5	4	86
Sūrat Yāsīn	24	17	25	9	3	6	84
Sūrat al-Ḥajj	27	22	14	9	3	4	79
Sūrat al-Raḥmān	19	38	17	1	2	2	79
Sūrat al-Furqān	24	22	8	14	5	5	78
Sūrat al-Zumar	24	18	9	16	5	4	76
Sūrat al-Anfāl	29	23	4	14	2	4	76
Sūrat al-Aḥzāb	30	18	10	8	5	3	74
Sūrat al-'Ankabūt	26	23	5	9	4	3	70
Sūrat al-Nūr	27	20	6	7	3	2	65
Sūrat al-Najm	15	13	31	1	3		63
Sūrat al-Dhāriyāt	17	18	18	4	3	1	61
Sūrat al-Rūm	18	16	13	7	4	3	61
Sūrat al-Dukhān	18	13	19	2	6	2	60
Sūrat al-Muddaththir	13	14	21	1	4	4	57
Sūrat al-Qamar	16	22	11	1	2	4	56
Sūrat Fuṣṣilat	16	19	5	11	2	2	55
Sūrat Saba'	18	13	4	7	11	2	55
Sūrat al-Shūrā	22	17	5	4	4	2	54
Sūrat al-Ḥāqqah	10	14	26		1	2	53
Sūrat Ibrāhīm	18	18	4	6	2	5	53
Sūrat al-Qalam	14	15	16	4	3	1	53
Sūrat al-Mursalāt	11	18	18	2	1	1	51

Sūrat al-Ṭūr	15	12	11	5	5	2	50
Sūrat al-Nāziʻāt	12	9	18		3	5	47
Sūrat Qāf	12	11	10	6	4	3	46
Sūrat Fāṭir	15	14	4	7	3	3	46
Sūrat al-Maʻārij	11	12	18	1	1	2	45
Sūrat al-Raʻd	14	20	2	4	4		44
Sūrat ʻAbasa	9	9	19	1	4	1	43
Sūrat al-Qiyāmah	11	7	19	1	2	1	41
Sūrat al-Nabaʼ	9	6	20	1	3	2	41
Sūrat Muḥammad	16	14	4	4		1	39
Sūrat al-Jāthiyah	18	9	1	3	4	3	38
Sūrat al-Muṭaffifīn	9	8	18		1	1	37
Sūrat al-Aḥqāf	12	12	3	7	2		36
Sūrat Luqmān	14	4	3	6	5	3	35
Sūrat al-Insān	17	5	7		3		32
Sūrat al-Sajdah	13	9	2	5	2		31
Sūrat al-Mulk	9	12	2	4	2	2	31
Sūrat al-Fajr	4	9	13		3	2	31
Sūrat al-Takwīr	10	9	8		2	1	30
Sūrat al-Fatḥ	17	5	3	2	3		30
Sūrat al-Ḥadīd	16	8	3	1	2		30
Sūrat Nūḥ	12	6	9	2			29
Sūrat al-Jinn	9	7	10	3			29
Sūrat al-Ghāshiyah	11	3	11		1	1	27
Sūrat al-Inshiqāq	6	7	10		3		26
Sūrat al-Ḥashr	6	13		3	3		25
Sūrat al-Mujādilah	6	8		5	1	3	23
Sūrat al-Burūj	7	2	8	1	4	1	23
Sūrat al-Layl	4	5	8	1	2	2	22
Sūrat al-Balad	2	9	8	1		1	21
Sūrat al-Muzzammil	4	7	9	1			21
Sūrat al-ʻAlā	8	2	8		1	1	20
Sūrat al-Infṭār	6	3	11				20
Sūrat al-ʻAlaq	5	4	9	1		1	20
Sūrat al-Taghābun	4	4	1	6	4		19
Sūrat al-Ḥujurāt	8	5	2	3	1		19
Sūrat al-Ṭāriq	8	1	9				18
Sūrat al-Shams	5	4	5	1	1		16
Sūrat al-Ṣaff	5	3	1	2	2	2	15
Sūrat al-Mumtaḥinah	8	3	1	2			14

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Sūrat al-Ṭalāq	7	3		2		1	13
Sūrat al-Taḥrīm	5	2	4	2			13
Sūrat al-ʿĀdiyāt	3	2	3		1	3	12
Sūrat al-Ḍuḥā	7	1	4				12
Sūrat al-Qāriyah	2	5	5				12
Sūrat al-Jumuʿah	6	4		1	1		12
Sūrat al-Munāfiqūn	5	3		3	1		12
Sūrat al-Humazah	1	3	5			1	10
Sūrat al-Bayyinah	2	3	2		2		9
Sūrat al-Zilzāl	2	3	4				9
Sūrat al- Inshirāḥ	3	2	2	2			9
Sūrat at-Tīn	2	1	2	1	1	2	9
Sūrat al-Takāthur	4		3		1	1	9
Sūrat al-Māʿūn	3	3	1	1			8
Sūrat al-Nās	1		6				7
Sūrat al-Kāfirūn	1		2		3	1	7
Sūrat al-Fātiḥah	3		2		2		7
Sūrat al-Qadr	4		2				6
Sūrat al-Falaq	2	3	1				6
Sūrat al-Masad	2		3			1	6
Sūrat al-Fīl	2	1	3				6
Sūrat Quraysh	1	1	2		1		5
Sūrat al-Ikhlāṣ	2		3				5
Sūrat al-Kawthar	2	1	1				4
Sūrat al-ʿAṣr	2	1	1				4
Sūrat al-Naṣr	3		1				4
Grand Total	2128	177	1173	663	36	237	6348

Table 1. Polarity screening by *sūrah* of the global sentiment analysis of the English translated Qur'ān

3.2 Topic (Feature-Level) Sentiment Analysis of a Qur'ānic text in English

This is an aspect-based level sentiment analysis that demonstrates the combined polarity of all the concepts (C) and entities (E) found in the text.[29] As shown in Figure 3, the topic categories are centred around the larger entities group (55.4%) and the smaller concepts group (44.6%).

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[29] Sophie de Kok et al., "Review-Level Aspect-Based Sentiment Analysis Using an Ontology," in *Proceedings of the 33rd Annual ACM Symposium on Applied Computing* (Pau: ACM, 2018), 315–22, https://doi.org/10.1145/3167132.3167163.

This section of the study covers topic identification as well as the different levelling types and polarity. An entity is defined as a particular object, such as a person, a group, an organization, etc. Instead of producing a single sentiment score for the entire document, entity sentiment analysis seeks to determine feelings about a specific entity in a document. Likewise, the same principle might be deduced for concepts as well. Also, Figure 3 demonstrates the distribution of the topic categories by polarities. The ratio of E/C for the polarity spectrum of P+, P, None, Neu, N+ and N was 1.63, 0.96, 2.42, 1.09, 0.51 and 0.69, respectively. As Figure 3 shows, the main topic of the (E) category in the Qur'ān is "Allah" and this is the essence of the book from which the fundamentals and foundations of Islam were derived. Moreover, this fact shows how the positive side outweighs the negative one as God's mercy precedes His punishment. This is evident from the *ḥadīth* of the Prophet Muḥammad (peace be on him) which states, "'None would be able to get into Paradise because of his deeds alone.' They (the Companions of the Prophet) said, 'Allah's Messenger, not even you?' Thereupon he said, 'Not even I, but that Allah wraps me in His Mercy.'"[30] Also, this opinion-mining field of research section could open the gate for a new series of deeper studies concerning the topic index of the sacred book using the Natural Language Processing (NLP) technique and its applications.

Topic Category	entity	concept
Count	2544	2052
Percent	55.4	44.6
Cum %	55.4	100.0
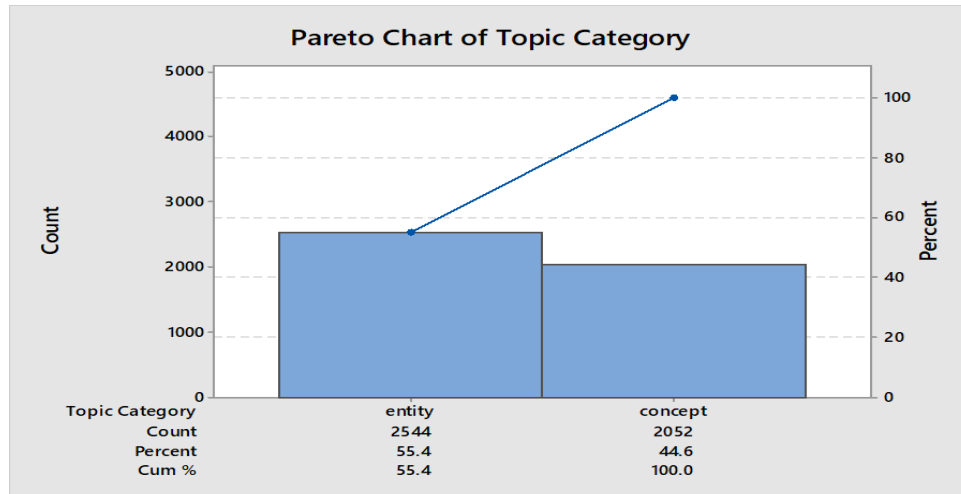
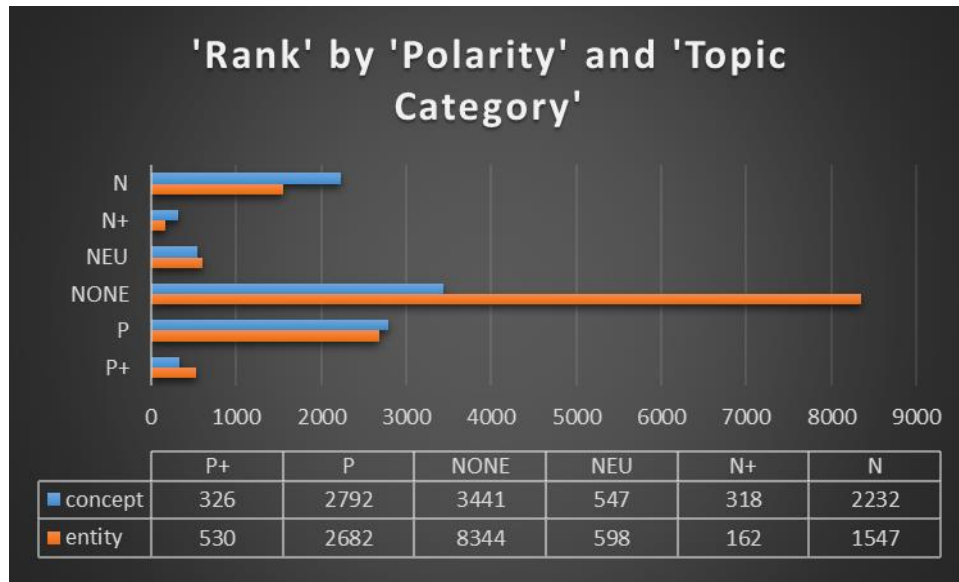[30] Muslim b. al-Ḥajjāj, *Ṣaḥīḥ*, Kitāb ṣifat al-qiyāmah wa 'l-jannah wa 'l-nār, Bāb lan yadkhul aḥad al-jannah bi 'amalih, Book 39, No. 6770, https://sunnah.com/muslim :2818a.

	P+	P	NONE	NEU	N+	N
concept	326	2792	3441	547	318	2232
entity	530	2682	8344	598	162	1547

Figure 3: Topic sentiment analysis showing the identified categories by count (upper) and by polarity (lower) after topic forms spotting

3.2.1 Topic Form Identification and Frequency

Topic forms were screened for predominance by the frequency of occurrence across all verses in the English-translated text of the Qur'ān as can be seen in Figure 4 which shows the first 60% of major topics. However, according to the Pareto principle of 80/20, the major contributing (80%) topics—to cover a wider range—that were identified can be found in Table 2. From the predominant four-fifths topics the following grouping that constitutes more than 67% of the list could be outlined. Thus, more than half of the topic forms that have been screened in the whole Qur'ānic English text can be aggregated into the following groups:

3.2.1.1 The Creator

This topic form refers to "Allah," "Lord," "God," "Lord of the Universe," and "Creator" with a contribution of 30.40% of the total topic forms. This is the first major topic to be identified normally in the Qur'ān.

3.2.1.2 Humanity

This topic includes 13.52% of the topic forms. It includes different mankind forms of "people" such as "man," "woman," "servant(s),"

"son," "father," "brother," "associate," "child," "host," "person," "wife," "opponent," "refugee," and "hypocrite," in addition to other identities.

3.2.1.3 Messengers, Prophets and Righteous Servants of God

This topic form covers 7.29% of the total identified items. Examples of this group include "Moses," "Muḥammad," "Abraham," "Noah," "Joseph," "Mary," "Adam," "Jesus," "Solomon," "Aaron," "Jacob," "David," "Isaac," and "His Messengers."

3.2.1.4 Divine Work and the Duties that Follow

Divinity, the heavenly books and their related commandments, rules, and etiquette are important topics mentioned in different situations and showed a participation of 5.85% from the 80% index. They include several forms such as "faith," "judgement," "decree," "throne," "path," "forgiving," "justice," "aid," "spirit," "straight way," "clear signs," and "charity."

3.2.1.5 Terrain and Nature

This topic includes about 4.10% in the topic sentiment analysis. For instance, topics that were identified are "world," "floor," "ground," "land," "garden," "mountain," "river," "sky," "sea," and "cave."

3.2.1.6 Body Parts

Among the first 80% of the major topics, the following body parts examples were mentioned: "heart," "face," "head," "foot," "ear," "back," "right hand," "tongue," "back," and "blood," with a total contribution of about 2.41% from the major forms.

3.2.1.7 Haven and Sanctuary

Terms referring to refuge were highlighted within the major topic form index and contributed by 1.81% as the following: "town," "city," "home," "place," "village," and "nation."

3.2.1.8 Living Things Other Than Humans

Different living things other than humans have been mentioned and the overall rate of occurrence among the majority 80% was 1.63%. Examples of the "creatures" include "angel," "Satan," "cattle," "tree," "camel," and "bird."

3.2.1.9 Flames and Fire

This item was found with a frequency of 0.79% of the major topic forms with mention of "fire" or "Blazing Fire."

3.2.1.10 Eschatology

The end of the world was an important topic addressed with a contribution of 0.62% with forms such as "Day of Resurrection," "Last Day," and "Day of Judgement."

3.2.1.11 Feeding and Nourishment

The forms mentioned here are "fruit" and "food" with a contribution of 0.38% from the four-fifths topics.

3.2.2 Polarity in Topic Sentiment Analysis

The polarity pattern shows a similar sequence cascade to that of the document-level sentiment analysis except that the "None" category has become the primary group that has been shifted from the middle region according to the Pareto graph in Figure 5. This means that about 46% of topics were found with no polarity that could be detected. With the addition of the second common polarity which is positive, the cumulative contribution reaches more than 69%. Topics instances with no polarity are numerous and include: praying to god, facts, narration, and the opening phrase of each *sūrah*: "In the name of Allah, the Merciful, the Compassionate." Due to the presence of two segments with opposed polarities, the overall polarity is neutral (Neu) and this could be evident from the following situations: "Although they have no knowledge regarding that, they only follow their conjecture and conjecture can never take the place of the Truth;"[31] "Whispering is an act of Satan, one that aims at causing grief to the believers; yet without Allah's leave, no harm can be caused to them. So in Allah should the believers put all their trust;"[32] "That will neither nourish nor satisfy their hunger;"[33] "But they rejected his statement as a lie and hamstrung the she-camel. For that crime their Lord rumbled down upon them, utterly

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[31] Qur'ān 53:29.

[32] Ibid., 58:11.

[33] Ibid., 88:8.

razing them to the ground;"[34] and "Surely most of them merit the decree of chastisement; so they do not believe."[35]

The direction towards negative sentiment topic has two levels demonstrated by segregated and identified verses that demonstrate unfortunate events and dire consequences. Reinforced impact negativity (N+) verses include "They did not forbid each other from committing the abominable deeds they committed. Indeed what they did was evil;"[36] "Hell shall be their bed, and also above them their covering. Thus do We reward the wrong-doers;"[37] "This is His manner of dealing with you. As for the unbelievers, Allah will surely undermine their designs;"[38] "They caused utter loss to themselves, and all that they had invented failed them;"[39] and "Surely Hell is the promised place for all of them."[40] N verses include "See how they forge lies about Allah! This in itself is a manifest sin;"[41] "And for their going so far in unbelief as uttering against Mary a mighty calumny;"[42] "They say: 'If what you promise is true, when will this threat be fulfilled?';"[43] "Their garments shall be black as if made out of pitch, and flames of the Fire shall cover their faces;"[44] and "Whenever any fresh admonition comes to them from their Lord they barely heed it and remain immersed in play."[45]

For positive sentiment topics, the same applies as above. For P+ topics, the following examples were demonstrated: God's love, remuneration, an optimistic view of the faith, and enjoying the gifts of the Lord. For P topics, the following examples were demonstrated: forgiveness and reward, contributing 60% of the topic forms by frequency.

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[34] Ibid., 91:15.

[35] Ibid., 36:8.

[36] Ibid., 5:79.

[37] Ibid., 7:41.

[38] Ibid., 8:18.

[39] Ibid., 11:22.

[40] Ibid., 15:44.

[41] Ibid., 4:50.

[42] Ibid., 4:156.

[43] Ibid., 10:49.
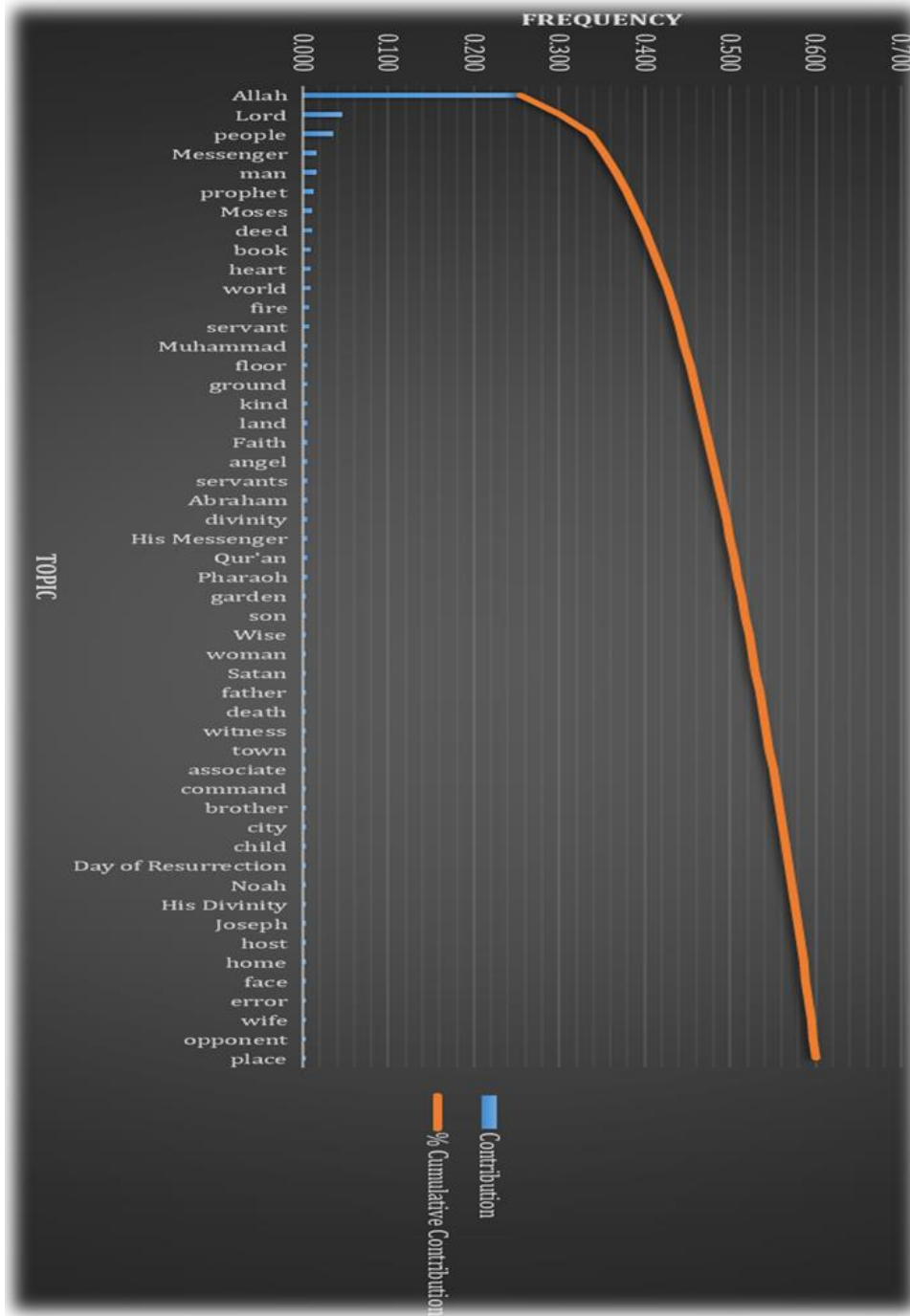
[44] Ibid., 14:51.

[45] Ibid., 21:3.

Figure 4: Topic sentiment analysis showing the main contributing keywords and concepts using the Pareto principle

Form	Frequency	Contribution	%	Cumulative
person	46	0.003	60.35%	
peace	46	0.003	60.63%	
mountain	46	0.003	60.90%	
store	45	0.003	61.18%	
judgement	43	0.003	61.44%	
Paradise	43	0.003	61.70%	
wealth	43	0.003	61.96%	
river	43	0.003	62.22%	
sky	42	0.003	62.47%	
fruit	42	0.003	62.73%	
weight	42	0.003	62.98%	
job	41	0.002	63.23%	
head	39	0.002	63.47%	
Our signs	38	0.002	63.70%	
sea	36	0.002	63.92%	
law	36	0.002	64.13%	
trust	36	0.002	64.35%	
side	36	0.002	64.57%	
Mary	34	0.002	64.78%	
stock	34	0.002	64.98%	
provision	34	0.002	65.19%	
foot	34	0.002	65.39%	
loser	33	0.002	65.59%	
state	33	0.002	65.79%	
admonition	33	0.002	65.99%	
Children of Israel	33	0.002	66.19%	
village	32	0.002	66.39%	
path	32	0.002	66.58%	
cattle	32	0.002	66.78%	
star	32	0.002	66.97%	
twain	32	0.002	67.16%	
load	31	0.002	67.35%	
refuge	31	0.002	67.54%	
tale	30	0.002	67.72%	
authority	29	0.002	67.90%	
sun	29	0.002	68.07%	
guardian	28	0.002	68.24%	
hypocrite	28	0.002	68.41%	
ear	27	0.002	68.58%	

kingdom	27	0.002	68.74%
universe	26	0.002	68.90%
Last Day	26	0.002	69.05%
Adam	26	0.002	69.21%
tree	26	0.002	69.37%
Jesus	26	0.002	69.53%
forgiving	26	0.002	69.68%
set	26	0.002	69.84%
religion	26	0.002	70.00%
right way	25	0.002	70.15%
soul	25	0.002	70.30%
call	25	0.002	70.45%
agreement	25	0.002	70.61%
helper	24	0.001	70.75%
loss	24	0.001	70.90%
account	24	0.001	71.04%
advent	24	0.001	71.19%
wind	24	0.001	71.33%
malefactor	24	0.001	71.48%
nation	24	0.001	71.62%
moon	24	0.001	71.77%
transgressor	23	0.001	71.91%
Solomon	23	0.001	72.05%
Compassionate	23	0.001	72.19%
friend	22	0.001	72.32%
Aaron	22	0.001	72.45%
companion	22	0.001	72.59%
God	22	0.001	72.72%
gold	22	0.001	72.85%
People of the Book	22	0.001	72.99%
company	22	0.001	73.12%
advertisement	22	0.001	73.25%
food	21	0.001	73.38%
parent	21	0.001	73.51%
mother	21	0.001	73.64%
family	21	0.001	73.76%
right hand	21	0.001	73.89%
community	20	0.001	74.01%
female	20	0.001	74.13%
zakāh	20	0.001	74.25%

arrogant	20	0.001	74.37%
decree	20	0.001	74.50%
creature	20	0.001	74.62%
boat	20	0.001	74.74%
Lord of the Universe	19	0.001	74.85%
tongue	19	0.001	74.97%
spring	19	0.001	75.08%
clear signs	19	0.001	75.20%
Christian	18	0.001	75.31%
His signs	18	0.001	75.42%
misfortune	18	0.001	75.53%
love	18	0.001	75.63%
back	18	0.001	75.74%
camel	18	0.001	75.85%
stone	18	0.001	75.96%
throne	18	0.001	76.07%
rain	17	0.001	76.17%
Jacob	17	0.001	76.28%
Holy	17	0.001	76.38%
Queen	17	0.001	76.48%
battle	17	0.001	76.59%
clay	17	0.001	76.69%
Day of Judgement	17	0.001	76.79%
Most Wise	17	0.001	76.90%
Mīm (Arabic alphabet)	16	0.001	76.99%
meaning	16	0.001	77.09%
Jew	16	0.001	77.19%
orphan	16	0.001	77.28%
dwelling	16	0.001	77.38%
bird	16	0.001	77.48%
ally	16	0.001	77.57%
triumph	16	0.001	77.67%
speech	16	0.001	77.77%
straight way	15	0.001	77.86%
left	15	0.001	77.95%
adoration	15	0.001	78.04%
gate	15	0.001	78.13%
Muslim	15	0.001	78.22%
course	15	0.001	78.31%
David	15	0.001	78.40%

charity	15	0.001	78.49%
group	15	0.001	78.59%
accusation	15	0.001	78.68%
cave	15	0.001	78.77%
blazing fire	15	0.001	78.86%
blood	14	0.001	78.94%
His messengers	14	0.001	79.03%
Isaac	14	0.001	79.11%
event	14	0.001	79.20%
justice	14	0.001	79.28%
aid	14	0.001	79.37%
high	14	0.001	79.45%
Aware	14	0.001	79.54%
limit	14	0.001	79.62%
spirit	14	0.001	79.71%
creator	13	0.001	79.79%
ungrateful	13	0.001	79.86%
spouse	13	0.001	79.94%
success	13	0.001	80.02%

Table 2: Sentiment analysis showing the remaining contributing 60-80% of the topic forms by frequency
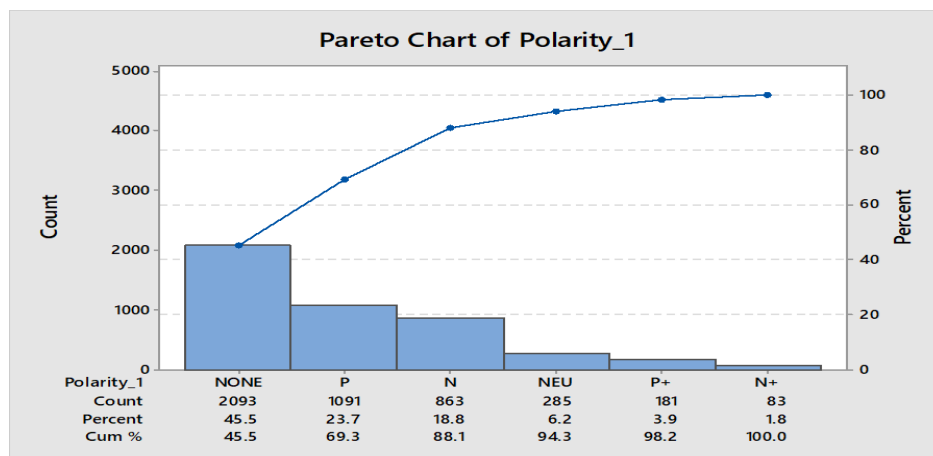

Figure 5: Topic sentiment analysis showing the polarity levels

3.2.3 Classification of Topic Types

The topic sentiment analysis study can classify the texts of verses into types based on a predefined ontology. The first level is general and not specific. In some verses of the Qur'ān, the classification could go down to the end of five levels if a definite identification can be made by emotion AI. Figure 6 illustrates the predominant categories with subcategories by focusing on the main identified contributors in each section. The contribution fraction of the identified types has reached about 0.64 from the total topics that reached level three. Concept, general topic, and person-type classes were the most predominant. However, the dominant feature of the entity category was confined to first-person names and God when focusing on the 60% majority types. Upon screening, analysis of form by type showed that "Allah" is dominant within 60% of types when examining names and God categories. "People," "prophet," and then "man" were found to be predominant under the person topic type but with much lower magnitude. In this survey, the segregation of type by polarity and topic form was considered. God and a person's first name were the major topic types in the classification by polarity with the main section having no polarity followed by P and N. Most topic forms with no polarity from the verses were "Allah," "people," "prophet," and then "man." A similar descending order but with a much lower magnitude was found with P than N polarities with a remarkable presence of people in N polarity.
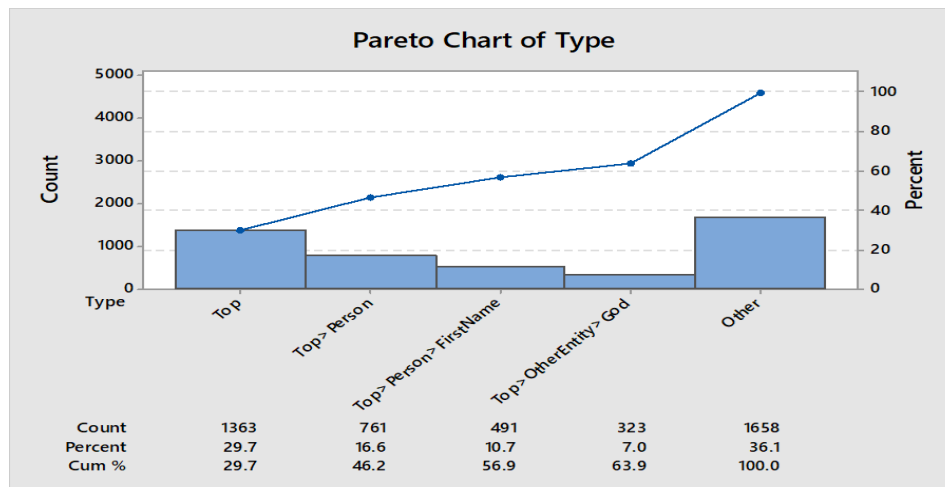

Figure 6: Topic sentiment analysis showing the identified >60% contributing level type

It is not surprising to reach this finding, since the Qur'ān is the Book of God and the Almighty Creator, who guides all people through His messengers and prophets. God's mercy precedes His anger and Islam always calls for optimism and positivity while avoiding pessimism and negativity. These sentiments are clear from the current textual study of the English translation of the Qur'ān.

4 Conclusion

The use of natural language processing is utilized in opinion mining and is an indispensable tool in the analysis of religious texts. The screening of the sacred text using a combination of the processing functions in Microsoft Excel and emotion AI programs (as an add-in software) for sentiment examination, in addition to a Statistical Process Control (SPC) program for Pareto analysis, provides a fast and valuable means for textual analysis with reasonable precision indicated by the outcome results with some improvements that might be needed in the irony study, a topic that should be addressed in later work. Along the same line, Pareto was used to provide an effective focus on the few important items in the screened index where the record of sentiment survey could yield hundreds or even thousands of results that one study cannot cover sufficiently. Accordingly, textual examination based on the 60/40 or 80/20 principle was used. Being the Book of God, the Qur'ān is the essence of Islam that is based on monotheism and that was evident in the sentiment analysis as primary topic form.

It follows that Islam is the religion of guidance from God to the world. It includes references to illuminating the path of mankind through the prophets and messengers. "Moses" was singled out in many situations for admonition and consideration. This was apparent in the sentiment analysis through the topic form. Also, reviewing the type of topics that have been exposed reveals the core of the sacred book. The message derived from the analysis of the English text of the Qur'ān is that the divine source flows through the messengers and prophets to all of humanity, which is derived from one source. Although the Qur'ān is full of verses that warn of evil and its negative consequences, God's mercy encompasses everything and the way to it is always available. Thus, the balance of goodness and success calls man to positivity, as the door of the Most Merciful is always open. This is also evident even with the extreme positive and negative polarities in both global and topic sentiment analysis. Nevertheless, significant fractions from verses discuss directions, supplications, tips and advice, along with many facts, including scientific information and others did not show any polarity.

Hence, the Qur'ān includes other aspects related to teaching people what is hidden from them and directing them to what benefits them, whether in life or worship. Moreover, it will be useful to go deeper and analyse the chapters individually, starting from the analysis provided for the polarity profile in the Qur'ān and to understand the uniqueness of each chapter.

One challenge that should be addressed using an opinion-mining study might involve incorporating other English translations of the Qur'ān and analysing their variability during textual analysis that might be reflected in the impression delivered to the readers compared with the source of the original Arabic text.

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