Exploring Topics and Sentiment in the English Version of Yassawi's *Divan-i Hikmet*: A Text Mining Approach

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Abstract—Sufism seems to be still vital for the world nowadays. Concerning Central Asia, Hodja Ahmed Yassawi may be deemed one of the earliest Sufi there, and his most famous work, which contributed to the Islamisation of the Turks, is a collection of wisdom called Diwan-i Hikmet. Therefore, this study attempts to evaluate the piece content using text mining techniques. The authors ran a term frequency analysis to uncover prevailing topical terms underlying the text along with their co-occurrence. Besides, the nature of emotion reflected in the writing was assessed based on the analysis of sentiment terms. The findings from the term frequency analysis show that the central concepts in the Diwan-i Hikmet are God, divine love, spiritual education, ascesis, and worship of God through service. Emotion-based data analysis revealed that the overall affective tone of the text has proven to be positive. The current work adds to the research on Sufi Islamic literature. The agenda for future research was specified.

Index Terms—co-occurrence, Islam, sentiment analysis, Sufi, term frequency, quantitative analysis

I. INTRODUCTION

Humanity has been experiencing an existential multi-crisis for many years, linked in particular to the imperfections of the social order which has been further exacerbated and highlighted by the worldwide epidemic of COVID-19 (Venter, 2021; Hofkirchner & Kreowski, 2022). In keeping with contemporary understandings, one avenue of cushioning the impact of this philosophical issue is to address the phenomenon of human spirituality which can be envisioned as a "connectedness to oneself, others, nature, or God" (Roberto et al., 2020). In recent years, spirituality has been actualised even in fields such as environmental protection (Irawan, 2022) and medicine (Vincensi, 2019; Rego et al., 2020). The study of Sufism, an esoteric branch of Islam that emphasises the ethical and aesthetic links between people and God, as well as between people and other ecosystems, reveals a broad and profound dimension of spirituality. The Sufism teaching is believed to espouse a form of love that is focused on the essence and spirituality of religious ideals (Ahmad et al., 2021). Sufism views aggressive behaviour, sadism, intolerance, and extremism as mirrors of a soul that is dry and empty as a result of a spiritual crisis. When someone believes they and their group are right and other groups are always wrong, it is a sign of a spiritual crisis because that person is unable to interpret life, values, morals, and attitudes toward God and all living things. The counter-radicalism that the Sufis advocate through their teachings, moderation in thought and behaviour, and tolerance in action are crucial for achieving mental calmness, inner well-being, and global peace. Sufis have played a vital role in the spread of Islam through preaching networks (Montenegro, 2022, p.261). Therefore, the expansion of Sufism-related studies should be supported and encouraged considering recurrent societal predicaments.

It seems that today's world, with its insecurity, uncertainty, and thirst for mysticism, needs Sufism: it is not for nothing that the pieces of the 13th-century mystical poet Jalaluddin Rumi have gained some popularity in recent years (Meiring, 2021), there are many Sufi-oriented communities on social media, solid scientific works on the socio-cultural impact of various Sufi figures and movements in the history of particular geographical regions are published these days (Rasyid & Nurdin, 2021; Khan, 2022; Zülfikar, 2022), and even an authoritative academic journal devoted to Sufism, the Journal of Sufi Studies, was founded several years ago.

As for Central Asia, the first Sufi that comes to mind of researchers is undoubtedly Hodja Ahmed Yassawi, a scholar who lived in the 12th century, that is a period when sects became widespread in Islamic lands, and the idea of Sufism was in its maturity period and started to be effective in Khorasan as well as Central Asian regions. Yassawi was one of the important "keystones" in the history of Sufism. He preached Islam that emerged in the Turkestan region, his dervishes were active among the Turkomans who settled in the Khorasan regions. He had a strong education and used Turkish poetry with a plain language and syllabic meter, which is the style of folk literature, in order to explain Islam to the people around him and to teach the subtleties of Sufism. Although he was a person who is well-versed in Iranian literature, he used the language and meter that the new believers could understand easier relative to the Persian language and prosody. This eventually caused his name to resonate among the people in a short time. His views and thoughts have survived to the present day through his religious-mystical-moral advice collected in his book entitled Divan-i Hikmet ("The book of wisdom"). His wisdom, which he expressed with these motives, found its relevance and greatly contributed to the Islamisation of Central Asia (Kaval, 2019).

Nevertheless, just as the senses in William Shakespeare's art are difficult to grasp for the general public nowadays due to cultural differences and linguistic shifts, so too the meanings that lie in the Divan-i Hikmet, nearly nine centuries later, may not be obvious to the modern reader. A means of computational linguistics, such as text mining, is a way of getting at least closer to understanding the material. The most common application of text mining is to automatically recognise patterns and extract information from text data so that a summary can be created that retains the key points of the document (Wiegersma et al., 2022). Thus, one can obtain content visualisation and see language patterns via the lens of text mining (Ledolter & VanderVelde, 2020). As far as the authors of this study are aware, computerised quantitative analyses of Yassawi's Divan-i Hikmet are scarce, they were performed only on the Turkish-language version of the writing and have focused on some discrete facets of the text. For example, Tastekin (2018) analysed the specificities of the use of the suffix "gil" in the Diwan-i Hikmet, but the findings are rather vague. Guner (2007) investigated the Diwan-i Hikmet in terms of parts of speech and their frequency, but the focus is on the subtleties of the Turkish language. In the study set forth here, the English translation of the hikmets was utilised as a source owing to the current dominance of the English language in the field of computational text analysis (Baden et al., 2021), not to mention that English is obviously a Lingua franca nowadays (Biglari & Struys, 2021).

The present work contributes to Sufi Islamic literature research domain by attempting to improve the comprehensibility of this literature. To fulfil this purpose, the authors explore the content of Yassawi's hikmets based on quantitative textual analysis. Given that counting the number of times particular terms appear in the text is a typical method of visualising text data, this study was particularly guided by Zipf's law which is an empirical law in linguistics stating that the frequency of a word in a corpus is inversely proportional to its frequency rank (Pimentel et al., 2021). The aim of this study is two-fold. Firstly, this investigation intends to identify the essential aspects that constitute the book by extracting prevailing (and thus viewed as highly representative) topical terms underlying the English version of the Divan-i Hikmet through a computer-supported text mining procedure. Secondly, since narratives are inextricably linked to the emotional content of the storylines, texts can encompass emotions (Jacobs & Kinder, 2019), and the current research therefore seeks to explore sentiments evoked by the piece using the analysis of sentiment terms.

II. METHODOLOGY

The textual data used in this paper come from an electronic version of the book Divan-i Hikmet by Hoja Ahmed Yassawi translated into English by Jonathan and Virve Trapman (Yassawi & Trapman, 2018). For the sake of quantitative analysis, automated text mining techniques were adopted. The word cloud summarising data of the top 100 frequent words in the text corpus was generated by virtue of the wordcloud2 package within the open-source platform R 4.2.1 (R Core Team, 2022). To visualise associations between the extracted terms, word co-occurrence examination was run in content analysis software KH Coder (Higuchi, 2017), with the co-occurrence relation automatically estimated by the Jaccard similarity index. In order to increase the accuracy of text mining, a list of stop words ("not," "with," "without," "am," "are," "be," and personal pronouns) was composed and applied. To appraise an emotional spectrum of the studied writing, sentiment analysis was carried out using the tidytext R package (Silge & Robinson, 2016) involving the so-called afinn approach which assigns each word with either a negative score (not below -5) signifying negative sentiment or a positive score (up to 5) indicating positive sentiment.

III. RESULTS AND DISCUSSION

A. Word Frequency

A word cloud with locutions frequently encountered in the Divan-i Hikmet is presented in Figure 1. Among the prevailing terms, there were "Lord" (446 references) and "God" (279 references). These words are used interchangeably in English. In this writing, "Lord" is often used to refer to Allah, with the latter mentioned 2.5-fold less frequently (174 references) when compared to "Lord". Interestingly, "Lord" stands for Creator of the Universe in the English-language version of the Quran (Shah & Amjad, 2017).

Figure 1 Wordcloud for Yassawi's Divan-i Hikmet. Frequency is represented in terms of size

The term "will" is used in the Divan-i Hikmet mostly as a modal verb (more than 500 references) and only 11 times the term is mentioned in the sense of the determination to do something ("God's will," "the will of the Lord").

Love (297 references) is one of the most important concepts of Islamic mysticism. In Islamic literature, love is used in two main senses, divine and human, and divine love is usually called "true love" and human love is called metaphorical or handicapped love. In the Divan-i Hikmet, divine love and the issues related to it are covered extensively, and almost all of the work is focused on those issues. Like all Sufis, Yassawi was a man of Love, and the Hikmets particulary reflect the beliefs embraced in the thoughts of Abu Yazid al-Bistam (804-874). The al-Bistam Sufi doctrine was characterised by an infinite love of Allah, renunciation of all earthly things and purification of the body and soul for merging with God. It advocated that if one's soul and body were imbued with divine thoughts, they would get rid of the ego, unite with Allah and perhaps even attain divine attributes (Mukti, 2016). By drawing attention to the object of love in his work, Yassawi defended the love for Allah and His Messenger, that is the true love. This sage believed that love is a gift of God to people. Those who receive this grace are enlightened and their souls are purified from all kinds of filth. According to Yassawi, divine love is the reason and meaning of existence. Adam can only get rid of himself and attain God through divine love. This is love that destroys the human:

> "False lover make me not justify Love,
> If you love you suffer long and hard,
> Longing for love without the soul being sacrificed,
> Is a life worthless of meaning, which is Truth.
> Not performing Zikr Haqq,
> Nor stirring three hundred and sixty vessels,
> Where four hundred forty-four bones do not burn up,
> You are the liar, never were, never will be the Lord's lover." (Hikmet 95)

On the other hand, it is emphasised in this art that love to God is a heavy burden and an incurable problem:

> "It is pointless to seek a cure for Love's ills,
> In Truth, all is destroyed in this process,
> Soul tormented, in awe and floods of tears,
> There is nothing harder than the sickness of Love." (Hikmet 96)

Nevertheless, one of the ideas pulsating within the verses is that anyone deprived of an inner experience that distinguishes him or her from other human beings can neither realise the purpose of his creation nor discover the truth of the world (Gül, 2019). In this sense, Yassawi claimed that a person without love could not even be a human:

> "One without Love will be seen as not human,
> Take heed, those lacking love will gather round Shaitan,
> Speaking words that are not Love,
> Islam and faith will slip through your fingers." (Hikmet 137)

Moreover, the author insists that the goal of a human should be to reach Allah exactly through serving. A true lover is one who goes through adversity, enjoys them, and sheds tears for Allah. By performing servitude with love, people can get rid of themselves and reach God. Ultimately, even worship without love is firmly positioned as a futile effort:

> "Be neither religious, nor a worshipper, be a lover,
> Be pure, toiling on the path of Love,
> Release the self to be worthy of His Abode,
> Those with no Love have no soul, not even faith." (Hikmet 95)

A term that appears in the Diwan-i Hikmet a little less frequently than love is "friends" (273 mentions). In classical philosophical traditions, friendship is generally regarded as one of the most important types of relationships that human beings, who have to socialise as a result of their nature, can develop. As is known, the Greek word *philos* meaning "friend" comes from the Greek verb *phileō* which stands for "to love". In Turkish, however, there is no such proximity of these terms, and regarding the observed work, "my friends" seems to be just a standard phrase to address the reader.

In Sufi literature, the term "path" is closely linked to the concept of tariqat or suluk, that is a method of spiritual elevation and mystical attainment of Truth when a dervish (monk) undergoes devotional exercises and recites the names of God under the supervision of his murshid (religious teacher) until completion of the spiritual journey. In Turkish Sufi poetry, "path" is the path of Allah, which leads the aspirant to God and absolute Truth. The devotee desires to join the caravan advancing on this road and seek only Allah and His favour (Karaman, 2021). The word "path" is mentioned 242 times in the Divan-i Hikmet. Yassawi states the purpose of this Sufistic way of purification is to release the ego:

> "Serve a Sufi teacher willingly,
> Do not proclaim you stepped on the path yourself,
> Be it known the path of Tariqat holds many dangers,
> Without proper guidance the course is barred, my friends." (Hikmet 41)

In Sufism, the heart and soul of the Prophet are believed to be the source of all sciences. Subjected to divine purification, the sciences are delivered to the hearts of Muslims in the form of states, morals, and deeds. While another Islamic Sufi mystic Yunus Emre refers to the heart as the source of the Divine Light, secrets, wisdom, and understanding, he also describes it as "the throne of the Lord" (Çetinkaya, 2015). The heart is like a treasure between the mind and the body, whereas the mind is the monarch of the palace of the body. With the strength of love, this gem becomes accessible. The heart reaches the station of emperorship when the mind is involved. Reasoning and love are not separate or independent matters for Yunus Emre. Contrarily, they are entangled and govern each other. However, in the Divan-I Hikmet, the words "soul" (212 references) and "heart" (151 references) are used to refer to those of the author or other devotees (e.g., "Devotee Hoja Ahmed, if in love, renounce the soul" or "The name of Allah makes all hearts sing"). Where the terms are mentioned together (26 times), mainly a reader's heart and soul are implied (e.g., "Make heart and soul heard, so no lies remain on Judgment Day").

Sufism is, *inter alia*, the renaissance discovery of complex connections between the world of people and the other, spiritual world. The main characteristic of the Eastern Renaissance is that this discovery is understood as a perceived reality rather than a product of imagination. According to a unified religious understanding in Sufism, existence is divided into two parts, divine and material, each having a special place in Sufism. The divine existence is called the important world, the invisible world, and the world of angels, while the material existence is called the realm of property. The word "world" is mentioned in the Divan-i Hikmet 178 times, predominantly in the sense of the material world (e.g., "Without becoming righteous, one remains glued to the world"), while ten times the antithesis between transient and celestial worlds was expressed through the collocation "both worlds":

> "The Universe is filled with the light of Muhammad,
> It appears this light illuminates both worlds." (Hikmet 83)

This is in line with Yunus Emre's hymns praising the Hereafter or Afterlife and its related concepts. The Hereafter is a realm where people will live after death. In his couplets, "the world and the hereafter" are discussed in the form of "two worlds." Our world is mortal, while the Afterlife is eternal, so it is necessary to lose this world and prepare for the Hereafter (Smith, 1993).

Another top locution in the text is "servant" (177 references). In its general sense, a servant is someone showing respect and devotion to Allah based on love. The concept of serving refers to the attitude and deeds that the servant exhibits in order to obtain the favour of God. In most cases (97 times), Yassawi uses the word when referring to himself:

> "Servant Hoja Ahmed there is nothing harder than God's Love,
> Do not ask for healing there is no cure for Love." (Hikmet 32)

Remarkably, the notions of divine love and worship are abreast in the above lines. To further evaluate lexical relations within the Divan-i Hikmet, a co-occurrence network was constructed (Figure 2).
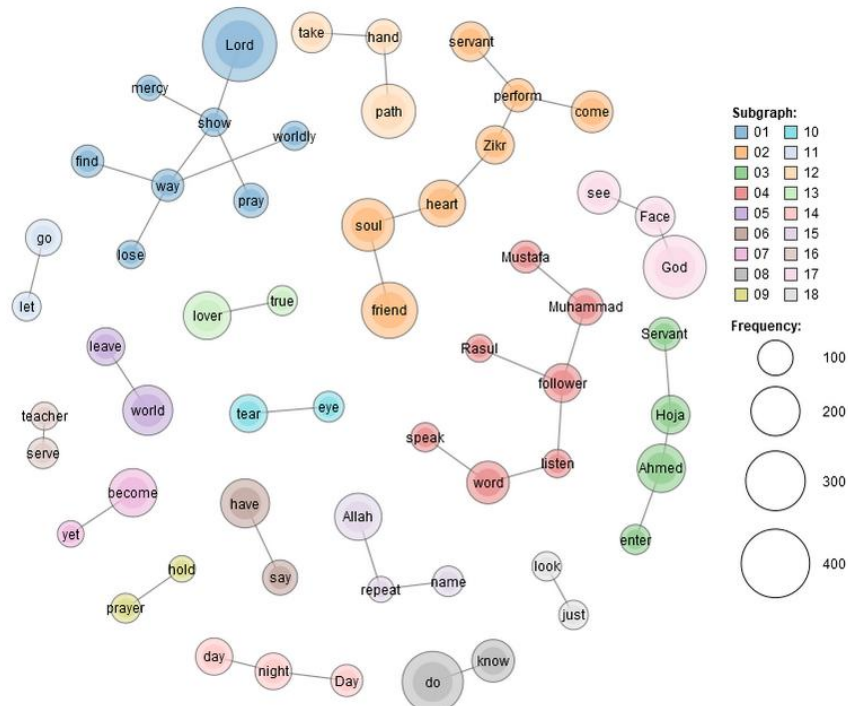
Figure 2 Co-occurrence Network Analysis of Extracted Words in Yassawi's Divan-i Hikmet

As may be induced from Figure 2, "Lord" is particularly associated with terms like "mercy" and "show." The combination of these words gives us a glimpse of the Creator's mercy requested or described by the narrator. Next, "path" is linked with the terms "hand" and "take." However, no sentence including all these three words could be found, only those containing "hand" and "take" (e.g., "say Muhammad, follow me and take my hand" or "on Judgment Day the Lord will take your hand"). There is an interconnection between "follower" and terms like "Muhammad," "listen" and "word." Perhaps this lexical node emerged from different fragments of the Diwan-i Hikmet, such as "Listen well, if you wish to be the best follower," "Listen to the words of Arystan Bab" (spiritual mentor of Ahmed Yassawi), and "Muhammad respectfully listens." Finally, "God" is associated with the terms "face" and "see," whereas "Hoja" and "Ahmed" are connected to the words "servant" and "enter." Nearly all of these locutions can be seen in one passage from the writing:

> "Servant Ahmed until you have renounced, do not announce
>
> The fact that you are in Love,
>
> To be in Love is a treasure, do not lose it,
>
> Those who lose it do not see the Face of God, my friends." (Hikmet 42)

With respect to "enter," it is particularly mentioned in combination with "Ahmed" in the 27th hikmet: "Hearing and heeding, slave Ahmed entered his cell." This is a reference to the episode in Yassawi's biography when, upon reaching the age of the Prophet Muhammad (63 years), he found it unacceptable to live the worldly life any longer and settled in a cave where this sage spent the rest of his life.

B. Sentiment Analysis

The time series of sentiments extracted from the Diwan-i Hikmet is displayed in Figure 3. As the data show, the whole area of the smoothed curve is located above the zero mark, indicating that the overall affective composition of the writing is positive, with emotional lapses in regions around circa the 20th and the 105th hikmets.
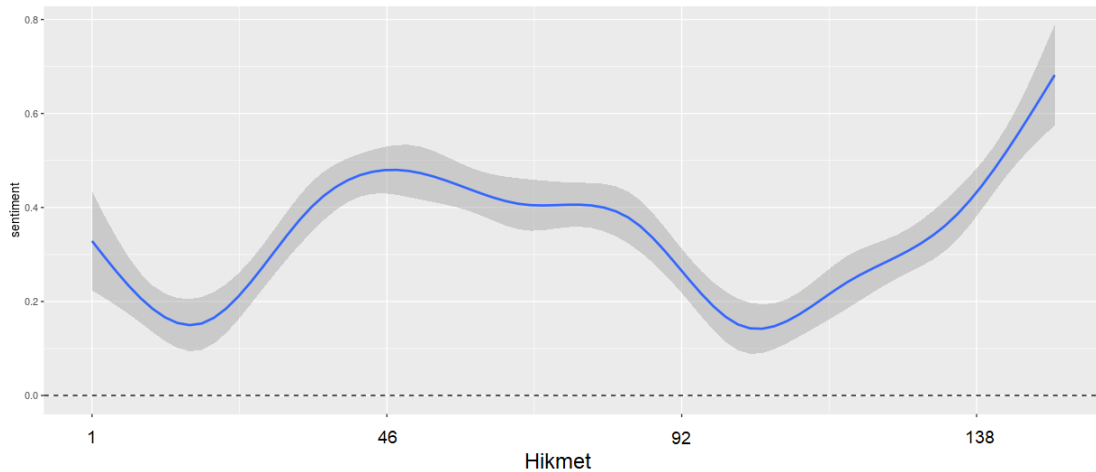
Figure 3 Sentiment Analysis of Yassawi's Divan-i Hikmet, With Smoothing

The exact words which made up the overall sentiment of the analysed work are depicted in Figure 4.
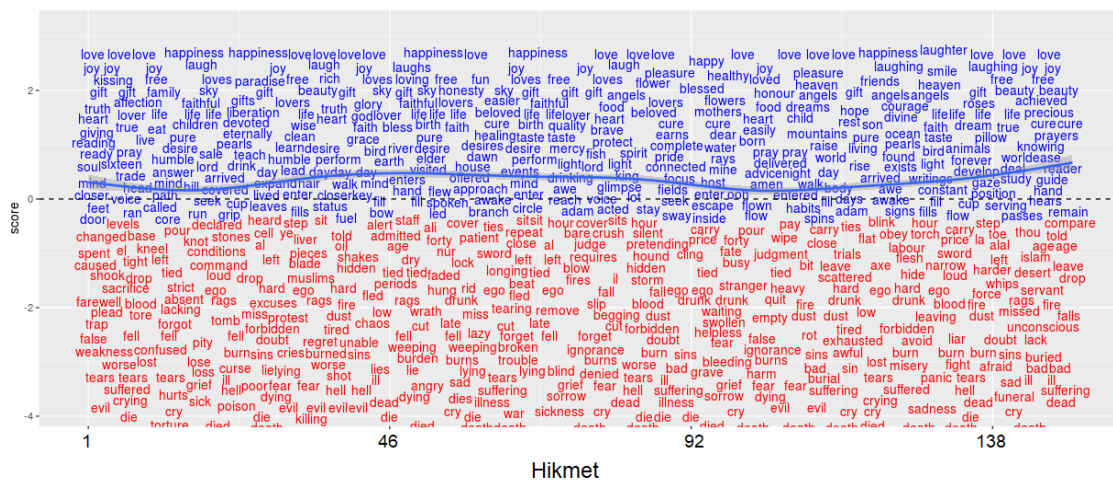

Figure 4 Prevailing Positive (blue) and Negative (red) Words in Yassawi's Divan-i Hikmet

C. Closing Remarks

Humanities scholars have typically used hermeneutic approaches to go into literary works. These methods however should be complemented by that quantitative and artificial intelligence-based when digital texts become increasingly commonplace (Abdel-Qader & Al-Khanji, 2022; Amaireh, 2022; Wang, 2022). The investigation outlined here is intended to discover the main topics of Yassawi's Divan-i Hikmet and its emotional arc profile. The results demonstrate that except for the words "will" and "friends" which were predominantly used as an auxiliary verb and a cliché, respectively, among the most frequent terms there were "Lord," "God," "love," "path," "soul," "heart," "world," and "servant." This word set may not come as a surprise since the analysis deals with a religious treatise. And from the above consideration of the top terms, it is clear that Yassawi expounded his wisdom verses as principles that were the essence of a religious worldview rather than as ethical theses. The Divan-i Hikmet introduces the reader to postulates that a Muslim should know about Islam. Ahmad Yassawī treated the theme of worship virtually in each of his wisdom verses and adopted a worship-centred method of preaching. However, regarding the affective composition, the hikmets generally share the tendency for a positive emotional message, with words like "beauty," "mercy," and "joy" appearing across the text. This is yet another refutation of the inhuman portrait of Islam that is often has been shaped by the West (Kamla et al., 2006) as well as by common people around the globe.

The current study is subject to some limitations. First, it exploits quite straightforward attributes of the piece. Nonetheless, given that Yassawi's Diwan-i Hikmet has hardly ever been exposed to an up-to-date quantitative analysis so far, the procedures applied in this work might be regarded as pioneering concerning the topic and the study seems to constitute an initial step towards regaining scholarly attention to the book. The second limitation arises from the fact that the hikmets have been little studied by quantitative techniques: it is impracticable for us to compare the findings with similar evidence due to its non-existence these days. The challenge for forthcoming research is therefore to step on our shoulders and extend the present research to more complex features of the text, such as metaphoricity, phonological features, or syntactic complexity.

IV. CONCLUSION

Based on the results of the term frequency analysis, it can be concluded that the central concepts in Yassawi's Diwan-i Hikmet are God, divine love, worship of God through service, spiritual education, and ascesis. The emotional content of the text is on average affirmative as the sentiment analysis revealed. Although this investigation does not claim to be a groundbreaking one, it represents a good starting point for the forthcoming analyses of the Divan-i Hikmet and Sufi texts in general.

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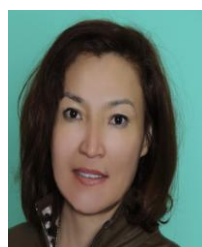
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