Çeviribilim ve Uygulamaları Dergisi
Journal of Translation Studies
Sayı/Number 26 (2019 Bahar / Spring), 16-36
Gönderme tarihi / Received: 01.08.2018
Kabul tarihi / Accepted: 24.06.2019

Translation Quality Assessment of TSE Standards Translated from English into Turkish: Examining the Effect of Commission in the Light of the Skopos Theory[1]

İngilizceden Türkçeye Çevrilmiş TSE Standartlarının Çeviri Kalitesinin Değerlendirilmesi: Skopos Kuramı Işığı Altında Komisyonun Etkisinin İncelenmesi

Research/Araştırma

Betül KOÇER GÜLDAL*, Elena ANTONOVA ÜNLÜ**

*Res. Assist., Department of Translation and Interpreting Studies, Ankara Hacı Bayram Veli University, betul.kocer@hbv.edu.tr ORCID ID: orcid.org/0000-0002-9306-5561
**Assoc. Prof. Dr., Department of Translation and Interpretation, Hacettepe University, elena@hacettepe.edu.tr ORCID ID: orcid.org/0000-0001-8544-6500

ABSTRACT

This study aimed to evaluate translation quality of the standards translated from English into Turkish before 2016 and after 2016 to determine whether there was an improvement in the translation quality of standards as a result of the introduction of a translation commission *[auftrag]*. For this purpose, corpus one (C1) consisting of ten randomly chosen standards in the field of construction translated before 2016, and corpus two (C2) consisting of ten randomly chosen standards in the field of construction translated after 2016 were evaluated according to the translation quality assessment model *Multidimensional Quality Metrics(MQM)* (Lommel, Burchardt,&Uszkoreit, 2014, 2015). The translation errors found in each corpus were classified according to seventeen error types and their severities. Then the results of the translation quality analysis of C1 and C2 were compared to find out whether there was any improvement in the translation quality of C2 after the introduction of the translation commission. Both quantitative and qualitative analyses were utilized in the study. The data analysis revealed that the introduction of the translation commission improved the quality of translation: there was a significant decrease in error rates in C2. Moreover, the error patterns in C1 and C2 were found to differ significantly: the translation errors in C1 were distributed uniformly over the error categories, while the majority of the errors in C2 belonged to the category of *Fluency*. The study finally discussed the findings in relation to the availability of a translation commission in the translation process within the framework of Skopos theory.

[1] This research is a part of an MA thesis.

Keywords: Translation Quality Assessment, Multidimensional Quality Metrics (MQM), Skopos Theory, Standards, Technical Translation

ÖZET

Bu çalışmada, 2016 yılında *çeviri siparişinin* kullanılmaya başlamasıyla standart çevirilerinin kalitesinde bir artış olup olmadığını belirlemek üzere 2016 yılından önce ve 2016 yılından sonra İngilizceden Türkçeye çevrilmiş standartların çeviri kalitelerinin incelenmesi amaçlanmıştır. Bu amaçla, 2016 yılından önce inşaat alanında çevrilmiş standart metinleri arasından rastgele seçilen 10 standarttan oluşan Derlem 1 (D1) ile 2016 yılından sonra yine inşaat alanında çevrilmiş standart metinleri arasından rastgele seçilen 10 standarttan oluşan Derlem 2 (D2) *Multidimensional Quality Metrics* (MQM) (Lommel, Burchardt, & Uszkoreit, 2014, 2015) çeviri kalitesi değerlendirme modeline göre değerlendirilmiştir. Her bir derlemde bulunan çeviri hataları bu modelin on yedi farklı hata türüne ve önem derecesine göre sınıflandırılmıştır. Çeviri siparişinin 2016 yılında kullanılmaya başlamasından sonra D2'nin çeviri kalitesinde herhangi bir artış olup olmadığını tespit etmek amacıyla her iki derlemin çeviri kalitesi analizlerinin sonuçları karşılaştırılmıştır. Araştırmada hem nicel hem de nitel analiz yöntemleri kullanılmıştır. Veri analizi çeviri siparişinin kullanılmaya başlamasından sonra yapılan çevirilerin kalitesinin arttığını göstermiştir: D2'de hata oranlarında önemli bir azalma bulunmuştur. Ayrıca iki derlem arasındaki hata türleri önemli ölçüde farklılık göstermiştir: D1'deki çeviri hataları, hata kategorine istatistiksel olarak homojen bir şekilde dağılırken, D2'deki hataların büyük bir kısmı *Akıcılık* kategorisinde sabit kalmıştır. Son olarak, bu çalışmada tespit edilen sonuçlar çeviri sürecinde bir çeviri siparişinin bulunmasıyla ilişkili olarak Skopos kuramı çerçevesinde tartışılmıştır.

Anahtar Sözcükler: Çeviri Kalitesi Değerlendirmesi, Multidimensional Quality Metrics (MQM), Skopos Kuramı, Standartlar, Teknik Çeviri

1. Introduction

In the rapidly globalized world, the need for mass production has increased the necessity for standards and their translations. Standards, in general terms, can be defined as materials or services that, thanks to certain norms, become recognizable for both a sender and a receiver when they talk or think about them. Main European standardization bodies define a text of standard as "a document, established by consensus and approved by a recognized body, that provides for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context" (ISO/IEC Guide 2, 2004, definition 3.2). Standardization, on the other hand, is the activity of establishing and applying standards in various fields (definition 1.1). Standardization plays a critical role not only in establishing markets for products and services but also in facilitating and regulating trade and industry.

The national standardization body in Turkey is the Turkish Standards Institution (TSE), which was founded in 1960. In 2016, TSE went through a radical change in translation policy, which resulted in the introduction of a new standard developing and translation guide, which can be defined as a translation commission in terms of Skopos theory (1978).Vermeer who proposed Skopos theory (2004) saw commission as "an instruction, given by oneself or by someone else, to carry out a given action: here to

translate" (p. 235) and put forward that a well-defined commission would contribute to the quality of a translation and help a translator to fulfill requirements related to the purpose and function of the translation as well as the needs of the target reader and culture. However, in practice, translators are not commonly provided with a commission. They are provided with a previously translated parallel text at best. In this respect, the present study aims to examine whether the introduction of the translation commission contributes to the quality of translation by comparing the quality of standards translated from English into Turkish before and after the introduction of the commission.

To this end, the study seeks to answer the following questions:

1. Are there any flaws in translations of standards from English into Turkish before 2016?
2. Are there any flaws in translations of standards from English into Turkish after 2016?
3. Is there a significant difference between the translation quality of standards translated before 2016 and after 2016?

Accordingly, the study first briefly defines Skopos theory, translation commission, and text type. It then gives a general overview of the *Multidimensional Quality Metrics Model* (MQM) and standardization in Turkey. Following the data collection and analysis, the study finally discussed the results.

1.1. Skopos Theory, Translation Commission and Text Typology

Skopos theory was developed in Germany in the late 1970s by Hans J. Vermeer and became a milestone for translation theories. The word *skopos* is used as a technical term to refer to the aim and purpose of a translation (Venuti, 2000, p. 221). Skopos theory, postulated in an essay published in *Lebende Sprachen* (Vermeer, 1978), views translation "not as a process of transcoding, but as a specific form of human action which is determined by its purpose" (Schaffner, 2008, p. 117). The skopos or purpose of a translation is defined by its commission, which comprises not only the goal but also the conditions under which that goal should be achieved (including the deadline and fee). Vermeer (2004) defines the commission as "the instruction, given by oneself or by someone else, to carry out a given action - here: to translate" (p. 229). The commission should be determined before the translation process begins; it can be determined by either the translator or by the initiator, i.e. client. According to Vermeer, in both cases, the translator acts in accordance with the "commission" since a well-defined commission enhances the quality of translation (Vermeer, 2004, p. 229). Vermeer stresses that a commission should not be limited to the instruction to translate a given text but comprise, firstly, the purpose of translation and, secondly,

conditions under which the translation needs to be conducted, such as the needs of target readership, design, style, and deadline.

Text type is another important concept which should be taken into consideration according to Skopos theory. Since texts may differ in function, genre, and informational load, text types emerge as a crucial factor determining the whole process of translation and "the text type and the purpose of a text justifies the translation method and strategy" (Nord, 2006, p. 1). In this respect, Reiss (1971) defined four main text types including informative, expressive, operative, and audio-medial texts, and established an interrelation between text typology and translation.

In the light of Reiss' text typology, standards are informative, the main focus of which is the content itself, that is informative texts do plain communication of facts, information, and knowledge and aim to precisely inform readers on a subject or phenomena in the real world (as cited in Nord, 1997, p. 37). In this respect, this study assessed the translations of standards taking into consideration the function of informative text type. *Multidimensional Quality Metrics* model (Lommel, Burchardt, & Uszkoreit, 2015a) was used for the translation quality assessment.

1.2. Multidimensional Quality Metrics (MQM)

The Multidimensional Quality Metrics (MQM) model was developed in the European Union and funded by QT Launchpad project for developing translation quality assessment metrics. MQM "provides a framework for describing and defining quality metrics which is used to assess the quality of translated texts and to identify specific issues in those texts" (Lommel, Burchardt, & Uszkoreit, 2015a). MQM is intended to provide various translation quality assessment metrics that can be used in all kinds of texts.

MQM adopts a "functionalist" approach according to which quality is assessed by 'how well a text meets its communicative purpose" (ibid), and meets requirements and expectations of the commissioner and/or target reader. Given that the translation of standards is concerned with the informative text type in line with Reiss' text typology, the main requirement for translation should be the transfer of precise information.

MQM defines one hundred and twenty error types under four main categories: accuracy, fluency, design, and verity. Errors in which the TT does not accurately reflect the ST are categorized under the category of *Accuracy*. It includes mistranslation, omission, addition, untranslated items, and terminology errors. Likewise, errors related to the physical presentation of the text are categorized under the category of *Design*. It includes errors related to layout, formatting, graphic, and table

presentations. The category of *Fluency* comprises error types related to ambiguity, inconsistency, spelling, style guide, typography, grammar, and locale convention. Lastly, the category of *Verity* is concerned with the text appropriation for the target audience and includes errors such as legal requirement errors and locale-specific content errors.

The MQM model also includes a weighing system for translation errors. According to the model, every error type is categorized and weighted according to the significance of translation error. The MQM model defines weighting as "a numerical indication of how important a particular error type is in overall quality assessment (Lommel et al., 2015b).

> Minor: Minor issues are issues that do not impact usability or understandability of the content. (i.e. if an extra space appears after a full stop, this may be considered an error, but does not render the text difficult to use or problematic.)
> Major: Major issues are issues that impact usability or understandability of the content but which do not render it unusable. (i.e. a misspelled word may require extra effort for the reader to understand the intended meaning, but do not make it impossible.)
> Critical: Critical issues are issues that render the content unfit for use. (i.e. a particularly bad grammatical error that changes the meaning of the text would be considered critical.) (ibid.)

1.3. Standardization in Turkey

Turkey plays a significant role in the European market in many areas, especially in trade. It has a functioning quality system compared to many countries in the areas of standards. Turkey has a large and expeditious growing standards stock. According to the 2016 progress report of Turkish Standards Institution (TSE), the standards catalog of TSE lists 36581 standards, which is "slightly fewer than in Romania but more than in most other countries, including the United Kingdom and Korea" (Guasch, Racine, Sanchez, & Diop, 2007, p. 252).

TSE is the sole national standardization institution of Turkey. The task of preparing all kinds of substances, goods, works, and service standards in Turkey is given to TSE by the Establishment Law No. 132. Only those standards which are prepared by TSE can be labeled as a Turkish Standard. The scientific examination and preparation of standards are carried out by the Specialized Committees of TSE consisting of representatives from government, academia, prominent sectors, consumer associations, research institutions, and translators, all of whom are commonly defined as reporters. Typically, any of the committees are responsible for

developing standards in their own specific fields. Currently, there are eighteen Specialized Boards and forty-six Technical Committees within TSE, which carry out standards developing and harmonizing activities in various fields such as environment, electricity, electronics, service, construction, chemistry, mining, machinery, food, agriculture and livestock, metallurgy, national defense, engineering service, forest, health, textile, transportation and carriage, and recently halal food (TSE, 2016, pp. 11-18). The year of 2016 can be defined as a turning point in the history of TSE because until then reporters were neither centralized nor given any explicit instruction on how to translate. In August 2015, TSE introduced a Standard Preparation Guide with the aim of setting a framework of preparation and translation of standards in a standardized way, which was put into practice in October 2016.In keeping with the assumption of Skopos theory, according to which "the realizability of a commission depends on the circumstances of the target culture, not on those of the source culture" (ibid), the introduced guide defines requirements for the translation of standards taking into account the expectations and needs of the target Turkish audience, which is reflected in the TSE Guide as follows:

> Although this Guide has been prepared in accordance with the CEN/CENELEC Rules (IR 3 Guide), its guidelines related to the form and content of the translated document have been prepared for the target audience, i.e. the writing rules of the Turkish Language Association (TDK) Writing Guide has been adopted as much as possible. (TSE, 2016, p. 6)

2. The Study

2.1. Data Collection

The Specialized Boards operating in TSE carry out standards developing and harmonizing activities in various fields, which are environment, electricity, electronics, service, construction, chemistry, mining, machinery, food, agriculture and livestock, metallurgy, national defense, engineering service, forest, health, textile, transportation, and halal food (TSE, 2016, pp. 11-18). The field of construction was randomly selected for the examination in the present study.

The present study evaluates the translation quality of chosen standards that were published by the Construction Specialized Board and translated from English into Turkish by technical committees affiliated to the Construction Specialized Board before 2016 and after 2016. The standards were prepared and translated by four Technical Committees affiliated to the Construction Specialized Board, which are *TK10 Building Materials Technical Committee, TK11 Isolation, Coating and Auxiliary Building Materials Technical Committee, TK12 Structural Safety and Acoustics Technical Committee,* and *TK13 Construction Safety Technical Committee*.

The study comprises two corpora. The first corpus (C1) consists of ten standards (each min. ten and max. thirty pages) translated before 2016 and chosen randomly out of sixty-two available standards. The second corpus (C2) consists of ten standards (each min. twelve and max. fifty-seven pages) translated after 2016 and chosen randomly out of thirty available standards.

2.2. Data Analysis

Initially, MQM was used to check error rates and patterns in the translations and their weightings. To assure the reliability of the results obtained in the data analysis, the inter-rater reliability was measured. For this purpose, an expert, who is a professional translator working for TSE, was requested to analyze one of the standards in the field of construction chosen randomly according to MQM. The percent agreement between the expert and our evaluation was determined as 86%. Further, qualitative and quantitative analyses were used to compare the corpora to see whether there is a significant difference between the pre-2016 and post-2016 translations in terms of error rates and patterns.

Finally, inferential conclusions were drawn based on the collected data by means of quantitative analysis to determine whether the error means of the two corpora were statistically different from each other. To this end, firstly, the equality of the total number of errors in C1 and C2 was tested. Secondly, the equality of the error weightings in C1 and C2 was tested. Thirdly, uniformity of core error categories was tested. The results of each test were discussed separately and all the conclusions were based on Statistical Hypothesis Testing.

3. Results

Corpus 1

The data analysis revealed that among 38,685 words examined in C1, 544 incorrect instances of translation were identified, which is equal to 1.4% of all lexical items revised. Table 1 below presents the summary of error types, their weightings (minor, major, critical) and their quantity found in C1.

Table 1.
Summary of Translation Errors Found in C1

Error types	**Minor errors**	**Major errors**	**Critical errors**	
Accuracy: Mistranslation	18	30	5	**53**
Accuracy: Omission	12	54	1	**67**
Accuracy: Addition	44	9	1	**54**
Accuracy: Untranslated	0	0	1	**1**
Accuracy: Terminology	2	10	1	**13**
Fluency: Ambiguity	0	8	0	**8**
Fluency: Inconsistency	16	25	0	**41**
Fluency: Spelling	2	6	0	**8**
Fluency: Style Guide	15	49	0	**64**
Fluency: Typography	8	8	0	**16**
Fluency: Grammar	19	17	0	**36**
Fluency: Locale Conv.	1	0	0	**1**
Verity: Legal Requirements	0	0	0	**0**
Verity: Locale-S. Content	0	3	0	**3**
Design: Layout	5	9	0	**14**
Design: Local Formatting	147	8	0	**155**
Design: Graphics & Tables	8	2	0	**10**
Total	**297**	**238**	**9**	**544**

As it is evident from the table above, among 544 instances of translation errors, 53 instances were defined as Mistranslation errors, 67 as Omission errors, 54 as Addition errors, 1 as Untranslation errors, 13 as Terminology errors, 8 as Ambiguity errors, 41 as Inconsistency errors, 8 as Spelling errors, 64 as Style Guide errors, 16 as Typography errors, 36 as Grammar errors, 1 as Locale Convention errors, 3 as Locale-specific Content errors, 14 as Layout errors, 155 as Local Formatting errors, and 10 as Graphics and Tables errors. The data analysis revealed that there was no translation error in the category of Legal Requirement in C1.

The examples below were chosen randomly to illustrate error types.

Ambiguity Errors

Example 1

> ST: CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom. (EN 14488-8, 2006, p. 1)
>
> TT: CEN üyeleri sırasıyla, Almanya, Avusturya, Belçika, Birleşik Krallık, Bulgaristan, Çek Cumhuriyeti, Danimarka, Estonya, Finlandiya, Fransa, Hollanda, İrlanda, İspanya, İsveç, İsviçre, İtalya, İzlanda, Kıbrıs, Letonya, Litvanya, Lüksemburg, Macaristan, Malta, Norveç, Polonya, Portekiz, Romanya, Slovakya, Slovenya ve Yunanistan'ın millî standard kuruluşlarıdır. (TS EN 14488-8, 2006, p. 1)

Ambiguity errors refer to instances that occur when a word, a phrase or a sentence in a text has an ambiguous or equivocal meaning in itself. The example above is an instance of lexical ambiguity just like all the ambiguity errors in the study were lexical ones. In Example 1, "Cyprus" in the ST was translated into Turkish as "Kıbrıs", which is the correct equivalent of the word in Turkish. However, Cyprus Island comprises two states. One is Greek Cypriot Administration of Southern Cyprus and the other is the Turkish Republic of Northern Cyprus, which is not a recognizable state for the UN (mfa.gov.tr). Although the intended meaning of "Cyprus" referred to the Greek Cyprus State for being a member of CEN institute in the ST, the word "Kıbrıs" might evoke Turkish reader to the Turkish Cyprus State for being the local autonomy of Turkey in the TT.

Inconsistency Errors

Example 2

> ST: Overall flatness (2 m straightedge) Local flatness (20 cm ruler). The check is carried out with a 2 m long straightedge, and a 20 cm long ruler. (CEN/TR 15739, 2008, pp. 11-12)
>
> TT: Toplam düzgünlük (2 m'lik cetvel ile) Bölgesel düzgünlük (20 cm'lik cetvel ile). Kontrol işlemleri, 2 m uzunluğunda bir gönye ve 20 cm uzunluğunda bir cetvel ile gerçekleştirilir. (TS CEN/TR 15739, 2010, pp. 11-12)

In Example 2, the term 'straightedge' was translated both as cetvel [ruler] and gönye [set-square]. Ruler and straightedge are used to measure length or check if a surface is flat and draw a straight, whereas gönye [set-square] is used to draw right angle with its triangle shape. The term straightedge should have been translated as mastar which means long, thin and flat board used as a ruler in construction (Tdk.gov.tr).

Addition Errors

Example 3

> ST: Description, designation and classification of aggregate concrete masonry units. (EN 771-3+A1, 2015, p. 15)
>
> TT: Beton kâgir birimlerin tarifi, kısagösterilişi ve sınıflandırılması. (EN 771-3+A1, 2015, p. 13)

In Example 3, the term "aggregate" in the ST was omitted in the TT. The term "aggregate" means "a whole formed by combining several separate elements" (Oxford dictionaries.com). The type of the material was defined with the term "aggregate" in the ST; however, the target reader was not likely to know the type of the material in the TT.

Grammar Errors

Example 4

> ST: The results of the determination of the product type shall be documented in test reports. (EN 16034, 2014, p. 4)
>
> TT: Ürün tipinin belirlenmesinin sonuçları deney raporlarında belgelenir. (TS EN 16034, 2014, p. 4)

In Example 4, the verb document in the ST was used with the modal shall which conveys necessity. However, it was translated as "belgelenir" [is documented] in the TT, which does not convey necessity or obligation. The IR 3 guide which sets the rules of standard texts and permits no deviation emphasizes the importance of translating the structures of necessity into another language to have an equal meaning (pp. 75-78). This rule helps avoid any confusion between the requirements of a document and external statutory obligations. In this example, the translation of the modal shall as a verb which does not carry the meaning of necessity is likely to cause confusions and misinterpretations as to the context.

Addition Errors

Example 5

> ST: This European Standard was approved by CEN on 5 June 2015. (EN 13310, 2015, p. 1)
>
> TT: Bu Avrupa Standardı CEN tarafından 05 Haziran 2015 Cuma tarihinde onaylanmıştır. (TS EN 13310, 2015, p. 1)

In example 5, the word "Cuma" [Friday] was added in the TT, though it was not present in the ST. According to the IR 3 guide, the date of approval shall be indicated by the year or the year and month of publication for documents which have more than one edition (IR 3, 2015, p. 41). However, in this example, the date of approval was indicated by the year, the month and the day, instead of the year and the month. As it was violating the requirements of the guide, it was classified as an error that affects the standardized style of the standard.

Corpus 2

The data analysis revealed that among 81634 words examined in C2, 314 incorrect instances of translation were identified, which is equal to 0.38% of all lexical items revised. Table 2 below presents the summary of error types, their weightings (minor, major, and critical) and their quantity found in C2.

Table 2.
Summary of Translation Errors Found in C2

Error types	Minor errors	Major errors	Critical errors	Total
Accuracy: Mistranslation	0	36	5	**41**
Accuracy: Omission	5	19	1	**25**
Accuracy: Addition	26	19	0	**45**
Accuracy: Untranslated	0	0	0	**0**
Accuracy: Terminology	0	0	0	**0**
Fluency: Ambiguity	0	10	0	**10**
Fluency: Inconsistency	5	33	0	**38**
Fluency: Spelling	1	2	0	**3**
Fluency: Style Guide	7	35	0	**42**
Fluency: Typography	31	3	0	**34**
Fluency: Grammar	2	9	0	**11**
Fluency: Locale Conv.	0	0	0	**0**
Verity: Legal Requirements	0	0	0	**0**
Verity: Locale-S. Content	0	0	0	**0**
Design: Layout	0	3	0	**3**
Design: Local Formatting	55	4	0	**59**
Design: Graphics & Tables	1	2	0	**3**
Total	**133**	**175**	**6**	**314**

As it is evident from the table above, among 314 instances of translation errors, 41 instances were defined as Mistranslation errors, 25 as Omission errors, 45 as Addition errors, 10 as Ambiguity errors, 38 as Inconsistency errors, 3 as Spelling errors, 42 as Style Guide errors, 34 as Typography errors, 11 as Grammar errors, 3 as Layout errors, 59 as Local Formatting errors, and 3 as Graphics and Tables errors. The data analysis revealed that there were no translation errors in the categories of Untranslation errors, Terminology errors, Locale Convention errors, Legal Requirements errors, and Locale-specific Convention errors in C2.

To see whether the observed difference between the translation quality of standards translated before the year of 2016 and after the year of 2016 is statistically significant, the following sub-questions were tested using suitable statistical analysis.

(a) Is there a significant difference between C1 and C2 in terms of the total number of errors?

The number of errors observed in C1 and C2 was assumed to have Poisson distributions and their mean rates were tested for equality. The procedure of the *Test for Two Poisson Means* is described in Gu et al. (2008). Applying this test to the data of the study, the equality of the mean rates was rejected against the rate of C1 which is higher at 1% significance level (W = 15.942, *p*= 0.0000). Thus, the data analysis revealed that there is a significant difference between C1 and C2 in terms of the number of errors. The conclusion is that the introduction of the commission in 2016 significantly improved translation quality.

(b) What is the maximum error rate multiplier that can be statistically concluded?

To improve the results of the sub-question (a), the ratio of errors was tested. The following example illustrates what the error rate multiplier means. If the error rate multiplier is 2.5, it means that the error rate before the innovation is 2.5 times that of after innovation. The maximum value of 2.5 is desired to be found. For this purpose, the same testing procedure used for the sub-question (a) was also used for the sub-question (b).

The threshold value was found to be $\rho = 3.1$ at 1% significance level (W = 2.367, *p*= 0.0090). The data did not provide sufficient evidence to conclude that innovation reduces the error rate more than 3.1 times compared to the previous translations. The conclusion is that the introduction of the commission in 2016 reduced the error rate by at least 3.1 times.

(c) Which error weighting(s) (i.e. minor, major, and critical) show(s) a significant reduction after the introduction of the commission in terms of the number of errors?

The same testing procedure used for the sub-question (a) was applied to each error weighting categorie (minor, major, and critical). Before presenting the formal test results, the data summary is given in Table 3.

Table 3.
Summary of Translation Errors in Terms of Their Weightings

	Minor	Major	Critical
C1	297	238	9
C2	133	175	6

Error weighting differences between C1 and C2 were tested for significance for each category at the following subchapters:

(c)1 Test of Minor Errors

Applying the test to only the data for minor errors, the equality of the mean rates was rejected against the rate of C1 which is higher at 1% significance level (W =12.941, *p*= 0.0000). Thus, the data analysis revealed that there is a significant difference between C1 and C2 in terms of the number of major errors. The conclusion is that the introduction of the commission in 2016 significantly reduced minor error rates.

(c)2 Test of Major Errors

Applying the test to only the data for major errors, the equality of the mean rates was rejected against the rate of C1 which is higher at 1% significance level (W = 9.312, *p*= 0.0000). Thus, the data analysis revealed that there is a significant difference between C1 and C2 in terms of the number of minor errors. The conclusion is that the introduction of the commission in 2016 significantly reduced major error rates.

(c)3 Test of Critical Errors

Applying the test to only the data for critical errors, the equality of the mean rates cannot be rejected against the rate of C1 which is higher at 1% significance level (W = 1.914, *p* = 0.0278). The data did not provide sufficient evidence to conclude that the innovation in 2016 significantly improved translation quality in terms of critical errors.

(d) Which core error category(s) (i.e. accuracy, fluency, and design) show(s) a significant reduction after the introduction of the commission in terms of the number of errors?

This section seeks to analyze the distributions of translation error across core error categories according to error patterns. The core error categories are accuracy, fluency, and design. Before presenting the formal test results, the data summary is given in Table 4.

Table 4.
Summary of Translation Errors of Core Categories

Core Error Categories	C1	C2
Accuracy	48,598	13,597
Fluency	44,979	16,905
Design	46,271	7,962
Total	139,847	38,464

Chiu and Wang (2009) suggests that "a homogeneity test for several Poisson means and this testing procedure is suitable for the purposes of this study since the research question here necessitates a comparison of more than two Poisson means" (p. 4). In other words, it is desired to test whether all error categories are distributed uniformly against at least one category. This test was performed separately for each corpus (C1 and C2). The core error category of verity was excluded from the data since this category had very low frequencies. The uniformity of errors across the core error categories for C1 and C2 were tested.

(d)1 Uniformity of Errors over Core Error Categories in C1

The *Homogeneity Test for Several Poisson Means* was applied to the data before 2016 and the uniformity of errors across core categories was not rejected (V = 0.144, p = 0.9304). The data did not provide sufficient evidence to conclude that the core error categories before the innovation have different mean rates. Hence, the conclusion is that all errors distributed uniformly across categories.

(d)2 Uniformity of Core Error Categories in C2

The *Homogeneity Test for Several Poisson Means* was applied to the data after 2016 and the uniformity of errors across the core categories was rejected (V = 49.433, p = 0.0000). The data provides sufficient evidence to conclude that the core error categories after the innovation have different mean rates. Hence, contrary to what was found for C1, the conclusion is that the errors did not distribute uniformly across categories.

The results of the statistical analysis can be summarized as follows. First, the data provided evidence to conclude that the introduction of the commission has significantly improved translation quality. Second, the data provided evidence to conclude that the commission has significantly reduced the error mean of C2 more than 3.1 times compared to C1. Third, the data provided evidence to conclude that the

introduction of the commission has significantly improved translation quality in terms of minor and major errors but not of critical errors. Finally, the data did not provide evidence for the non-uniformity of error categories in C1, whereas the distribution of the errors in C2 was non-uniform across the core error categories.

4. Discussion and Conclusion

The purpose of the present study was to examine whether the introduction of the translation commission contributed to the quality of translation. For this purpose, the study compared the quality of the translation of ten randomly chosen standards translated from English into Turkish before the year of 2016 with ten randomly chosen standards translated from English into Turkish after the year of 2016 when the translation commission was introduced to TSE.

To this end, the study aimed to answer the following research questions:

1. Are there any flaws in translations of standards from English into Turkish before 2016?
2. Are there any flaws in translations of standards from English into Turkish after 2016?
3. Is there a significant difference between the translation quality of standards translated before 2016 and after 2016?

Concerning the first research question, the quantitative and qualitative data analysis revealed that there were 544 incorrect instances of translation out of the 38,685 lexical items revised in C1, which is equal to 1.4% of all the lexical items revised. Among 544 instances of translation errors in total, 188 errors fell under the category of Accuracy (53 instances were defined as Mistranslations, 67 as Omissions, 54 as Additions, 1 as Untranslation, and 13 as Terminology errors), 166 errors fell under the category of Fluency (8 as Ambiguity errors, 41 as Inconsistency errors, 8 as Spelling errors, 64 as Style Guide errors, 16 as Typography errors, 36 as Grammar errors, and 1 as Locale Convention errors), 179 errors fell under the category of Design (14 as Layout errors, 155 as Local Formatting errors, and 10 as Graphics and Tables errors) and 3 errors fell under the category of Verity (3 as Locale-specific Content errors). Among of all the detected errors, 9 belonged to critical, 238 to major, 297 to minor errors.

The data analysis showed that although the most frequent category was Accuracy among the three core error categories, all the translation errors were distributed statistically uniformly.

The recorded results suggest that the translation errors varied by error types ranging from Mistranslation to Grammar. This result apparently indicates that the

translations of standards before the year 2016 were not compatible with the function of informative texts and peculiarities of standards because informative texts need to be written and translated in concise and clear sentences without ambiguity, which suggests that the translation quality of C1 would require improvement via the use of more accurate translation and more compatible format arrangements.

As for the second research question, the quantitative data analysis revealed that there were 314 incorrect instances of translation in C2, which is equal to 0.38% of all the 81,634 lexical items revised. Among 314 instances of translation errors in total, 111 errors fell under the category of Accuracy (41 Mistranslations, 25 Omissions, and 45 Additions), 138 errors fell under the category of Fluency (10 Ambiguity errors, 38 Inconsistency errors, 3 Spelling errors, 42 Style Guide errors, 34 Typography errors, and 11 Grammar errors), 65 errors fell under the category of Design (3 Layout errors, 59 Local Formatting errors, and 3 Graphics and Tables errors). The data analysis revealed that there were no translation errors in the category of Verity in C2. Among all the detected errors, there are 6 critical errors, 175 major errors, and 133 minor errors.

Comparing the error rates in C1 with those in C2, there were still 314 incorrect instances of translation in C2 although the number of errors in all categories decreased to some extent in C2. The qualitative data analysis showed that Fluency was the most frequent core error category, which comprises errors of Ambiguity, Inconsistency, Spelling, Style Guide, Typography, Grammar, and Locale Convention. Taking into consideration the informative function of standards, translators are supposed to provide accurate and precise translations. However, the errors related to the category of Fluency in C2, especially ambiguity, inconsistency, spelling, and grammar spoil the quality of the translation, thereby misleading the users and resulting in an incorrect utilization of standards.

Concerning the third research question, the data analysis of the translation quality of construction standards before and after the year of 2016 revealed that there was a significant difference between the quality of standards translated before and after the introduction of the commission. Considering the source of reduction in the total number of errors in terms of error weightings, the minor and major errors significantly decreased whereas the decrease in the critical errors was not significant.

The statistical data analysis revealed that the introduction of the commission significantly decreased the error rates of C2 more than 3.1 times compared to C1 and thus improved the translation quality, thereby changing the distribution of error patterns. Accordingly, the errors distributed uniformly across the core error categories in C1, while the predominant category of errors was Fluency in C2.

Overall, the study provides a piece of evidence that the presence of commission is likely to enhance the quality of translation and supports the view of Vermeer that a translator should be provided with a properly defined commission before starting the process of translation.

Finally, regarding the flaws that were still available in the translation of standards after 2016, the following speculations and suggestions may be brought forward:

As it is defined in the Guide of TSE (2016), translators were provided with instructions on the design of standards. Not surprisingly, the results of translation quality analysis of C2 demonstrated that the main decrease in errors was recorded in the category of Design. However, the errors related to the category of Fluency (Ambiguity, Inconsistency, Spelling, Style Guide, Typography, Grammar, and Locale Convention) still occur in the translations after the year of 2016. A possible reason for the continuation of errors in these categories may be related to the nature of commission marked by the lack of information about the function and peculiarities of the informative text type. Since informative texts need to be written and translated in concise and clear sentences, it can be suggested that TSE should further explain and elaborate on translation requirements for the informative text type, which would allow translators to produce more accurate translations of standards.

What is more, the data analysis of C2 revealed that although the Guide provides comprehensive instructions about consistent terminology and elements related to the numbering of clauses, there were still inconsistencies with these elements in the translations after the year of 2016. These errors might be due to the fact that translators used previous translations as an example. In this respect, translators should be advised by TSE to maintain the translation process by strictly following the instructions of the Guide (2016) rather than consulting parallel texts, which were translated before the introduction of the commission. It can be also suggested that the translators should go through a special training in all aspects of translating standards.

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