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Quantitative Assessment of Similarities and Differences between East Collectivists and West Individualists in Open Content Learning Activities (OCLA)

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Abstract

Background & Aims: Behavior depends on mental processing and assessment of goal choices. Such assessment influenced by individual preferences, which is also reshaped by cultural values, which means that motivation is cultural. There are recognised differences (and similarities) in motivation between individualists and collectivists although the universality of motivation. Previous studies have explored differences between those contributing to Wikipedia across cultures and those volunteering to real-world organisations, but are any differences between those *OER read-writers*, who read (only [non-contributors]) or write (involve reading [contributors]), open content educational resources, such as Wikibooks, from Eastern collectivists and Western individualists – a question that is answered in this paper.

Methodology & Methods: To answer this research question, two studies was undertaken. Study 1 involved a web-based survey that was used to collect the data from Arabic Eastern collectivist *Wikibooks read-writers* and English Western individualist *Wikibooks read-writers*. The survey aimed to measure the intrinsic and extrinsic approach motivation and the different avoidance motivations. Study 2 involved a face-to-face questionnaire that was used to collected data from collectivist and individualist non-Wikibooks read-writers about their views on whether a motivation can be seen as self-oriented or others/community-oriented.

Results & Findings: Results of data analysis shows that there are significant differences between participants from the two cultures. Collectivists are motivated more by extrinsic problem-solving reasons than the individualists. Moreover, the self-oriented motivations are weighted more than the others-oriented across the two cultures, but higher for individualists than for the collectivists. Lack of confidence, is however, has no difference across the two cultural groups. Beyond other findings and implications discussed in this paper, future research should further investigate whether the strategies for culture-based open content learning activities have improved OCER contributions.

Key words: Wikibooks, Open Educational Resources (OER), Open Content Learning Activities (OCLA), Motivations, Eastern Arabic Collectivist, Western English Individualist, Collectivism & Individualism.

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Introduction

Cultural values are expressed in core philosophical, religious and historical texts. These values shape individual decisions about choices made within varying codes dictating what is / is not right [1]. Even within these choices, individuals select from options that meet with their 'personal' desires [2]. Our mind's programming alerts us what to do and what not to do, according to what we have learned, in ways that are acceptable to our surrounding societies – and such mental programming is organized across three levels: individual, collective and universal [3]. Thus culture affects the individual's selection of specific behaviours. Hofstede [3] was interested in cross-cultural differences and similarities, and argues that human behaviour reflects forms of cultural mental programming, which although it cannot be seen, human behaviour can be observed. Hofstede [3] constitutes four (and later five) dimensions to create a typology of cultural predispositions: power distance, uncertainty avoidance, individualism, masculinity, and later long-term orientation.

The individualism dimension examines how people perceive themselves and how they see others. Hofstede [3] argues that individuals from individualist cultures are more self-oriented, while those from collectivist cultures are more community-oriented. More specifically, in individualist nations (individualist cultures) people are expected to look after themselves and their immediate families, and prime goals are based on personal or individual considerations [3]. People in such cultures are expected to compete with co-workers to achieve their goals, and tend to be loosely integrated into their communities [3]. Such people report values of personal freedom and independence, and individual decision making is encouraged. In contrast to individualist cultures, people in collectivist nations (collectivist cultures) set goals prioritising other people in their communities and to achieve goals within established groups. They are integrated into strong relationships, and their in-group relationships are very cohesive. There is more emphasis on group decision making and group well-being. Although Hofstede [3] sees cultures as ranging from high individualism to low individualism, on one dimension, Triantis [4] have explored four aspects of cultural orientation: the equality aspect as a horizontal orientation and hierarchy aspect as vertical orientation – aspects that are quite closer to the power distance dimension, and while individualism focuses on independency, exchange relationships, and personal goals, collectivism focuses on inter-dependency, communal relationships, and in-group goals. In other words, cultures can be seen as horizontal individualism, vertical individualism, horizontal collectivism, or vertical collectivism.

Motivation is cultural [3; 5; 6; 7; 8]. Research within a cross/multi-cultural environment has furthered to explore differences beyond tendencies of universalising motivation modelling. For example, although goal achievement is a universal motivation, collectivist Chinese students are affiliation-oriented while individualist British students are competitiveness-oriented [9]. While people in individualist cultures prefer high-independence goals, individuals in collectivist cultures prefer low-independence goals [10]. Moreover, goals can be impacted by cultural orientation, and are seen to be either self-oriented (self-interest goals) or others-oriented (ego-social goals) by those who valuing of those goals [3]. For example, while the Japanese who have interdependent views of the self positively engage with interpersonal emotions such as friendly feelings, Americans positively engage with independent emotions such as pride [11]. Kitayama and Markus [12] argue that individuals in European-American cultures are likely to insist that happiness is attained by personal striving (or personal achievement), while in East Asia, happiness is considered as the self in relationship with others. Correlating culture with motivation, it can be said that there is evidence that both 'autonomy' and 'relatedness' [13] vary across individualist and collectivist cultures [14; 15].

Moreover, previous research also found that responsiveness to others' needs differs across cultures: while it can be seen as '*obligated*' in collectivist cultures, it is a matter of '*choice*' in individualist cultures [16; 17; 18; 19; 20; 21]. For example, Jacobsen [18] found that while a Middle Eastern child values obligated responsiveness, a Western Israeli child values voluntarily responsiveness.

As discussed above, previous studies have explored differences in goal achievement between individualists and collectivists. Even reasons of those who volunteer their time and effort in real-world organizations can be recognized as impacted by culture. Previous studies aiming to explore volunteering motivations, it can be concluded that there a well-recognised difference between Western individualists (such as in the United States) and Eastern collectivists (such as in Hong Kong): while collectivists of Hong Kong are highly motivation by social reasons for volunteering [22], it found the lowest for individualist Americans [23] – as outlined in Appendix 1. Hustinx et al. [24, pp. 365-366] have taken a new perspective in assessing differences between those who volunteer across a number of nations. It can be understood from the means of volunteering reason orientations to be correlated with the level of individualism (low, medium, high) – and more specifically, the self-oriented reasons are positively correlated with individualism – as outlined in Appendix 2. In other words, the more individualist, the more self-oriented, and vice versa

Rcognising cultural differences in the digital sphere, several studies have explored differences in website design [25; 26; 27; 28; 29; 30; 31; 32; 33; 34], and such differences in the design aims to attract visitors from their specific "cultural populations". Furthermore, and in recognising cultural differences within the digital sphere, Pfeil, Zaphiris and Ang [35] found significant negative correlation between adding or clarifying online information and the level of individualism. The higher the individualism of the 'home' culture of Wikipedia contributors, the less likely it is for individuals to add and or clarify information.

Open educational resources (OER) , such as Wikibooks, have become core pillar components for e-learning 2.0 [36], and depend generally, at least in most cases, on volunteering contributors who are decentralized and distributed across the world. However, it must be acknowledged that not all OER users are contributors or writers, as there other users who are readers only. The author names both groups as "*OER read-writers*". Those world-wide OER read-writers raise an issue about the culture-specific content. Yuan, MacNeill and Kraan [37, pp. 15-16], for instance, have argued that OER projects give learners 'an insight into culture-specific methods and approaches to teaching and learning'. They stress that 'localizing OER material is not only a question of language but also one of culture'. Having stressed that, the cultural differences as recognized from reasons for contribution (or even non-contribution) to open content educational resources (OCER) are yet not explored. Exploring cultural differences in OCER motivations is especially necessary in order to the design of effective learning activities. For example, previous research focused on the design of e-learning activities, highlighted that it is best to focus on group work when designing activities for collectivists, while individualists prefer activities that allow them greater freedom in terms of knowledge expression and creativity [38].

Methodology

If culture is seen to have an impact upon those who volunteer to real-world organisations (RWO) and those who contribute to open-content webpages (OCW), the questions remain: *Are there any differences in motivational reasons for participating in open educational resources (OER), and how such differences be measured?* To answer this research question, it was needed to determine a tool or a model that is qualified enough to explore cultural differences in OCER motivations.

In a previous study [39], it was argued that a motivational model as outlined in the Self-Determination Theory (SDT) [13], agrees to large extent to explore intrinsic and extrinsic reasons for contribution to OCER and reasons for con-contribution. However, such model was needed to be adapted to further explore cultural differences in a systematic way. Two new layers, as represented in Figure 1, are "theoretically" added (as shaded in light-blue) to the motivation model of Self-Determination Theory [13], and that the new model, named "OER Read-Writers Motivational Model", is argued to be providing a systematic tool to explore the differences across the individualist and collectivist cultures. The first new self-social layer is to enable assessing the self-orientated and others-orientated goal achievement, while the second new approach-avoidance layer is to explore goal valence as approaching or avoiding a specific goal as well as exploring the issue of conflict between the two.

Motivation					
Amotivation		Extrinsic Motivation		Intrinsic Motivation	
Values (Task Outcomes)	Ability (Process Characteristics)	External regulation (Reward / Punishment)	Introjected regulation (Ego-enhancement & Guilt reduction)	Endorsed values (Usefulness)	Interest based (Enjoyment)
Social	Self	Social	Self	Social	Self
Avoidance		Approach /Avoidance		Approach	

Figure 1: OER Read-Writers Motivational Model

It must be acknowledged that, however, that human motivation is not only affected by culture, other factors such as the demographic factors (age, education level, education field, and ICT skills) as well as the contextual, political and educational systems also affect the human motivation.

This paper aims, I aimed to explore cultural differences between OER read-write Eastern Arabic collectivists and Western English individualists – especially when there are "measures" of cultural differences [3; 40] between these two cultures – as demonstrated in Figure 2.

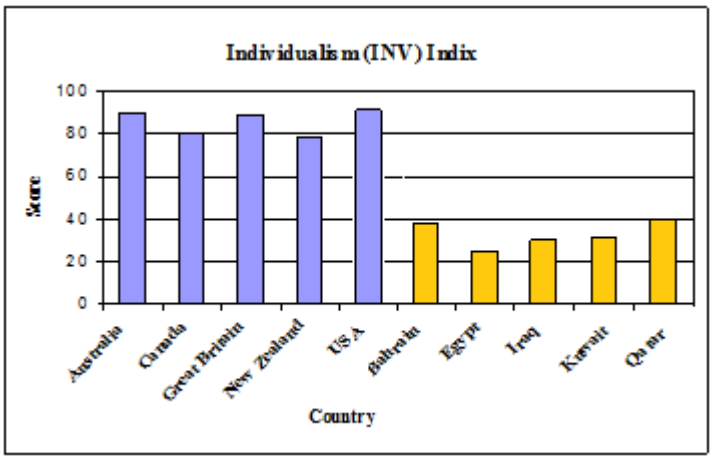

Figure 2: Individualism index for selected nations

In this paper, the author aims to explore whether there are any differences between individuals who use and contribute to OER, in which such differences can be explained by their cultures and whether individual and contextual differences contribute to the differences in OER motivation – as examined in Study 1. Moreover, whether these differences can be seen as self-oriented and/or others/community oriented from the views of people from the same culture – which is examined in Study 2.

Study 1

Web-based questionnaire was designed and developed by the author using MS Front Page, and the database was developed using MS Access which was hosted on Windows Server. The online questionnaire was available in two languages English and Arabic to collect the data from western individualists and eastern collectivists. The web-based questionnaire involved five parts: 1) participants' demographic details including country, age, gender, educational level and field, and schooling system; 2) information about the context involved religion, and education system (teacher ICT skills and level of ICT equipment in schools); 3) 5-point Likert-scale questions designed to elicit participants' reasons for contribution to Wikibooks and reasons that hinder or decrease contribution; 4) subjects/topics participants indicate they contribute to and read; 5) open-ended questions that enable participants to discuss in their own voices any reasons they may have for approaching or avoiding contribution to OER. The open-ended questions constructed to identify reasons for contribution and reasons for non-contribution would provide a sense of content validity: 'the degree to which a measure covers the range of meanings included within a concept' [41, p. 155]. It was argued that if answers to these open-ended questions show consistency with meanings of scale items, then the measure can be considered valid.

Responses to the questionnaire were 371, and after cleaning the data were N= 262. The English participants were 159 while the Arabic participants were 87. There are 16 Indian participants, who participated in the English version of the survey, are not included in the analysis presented in this paper. The sample of research participants, as presented in Table 1, can be classified into two categories:

1) Contributors: those participants who answered the reasons for contribution scale, and they can be classified into two sub-categories: A) Certain contributors: those who answered only the reasons for contribution scale – possibly because they saw nothing to hinder them from contribution; and B) Hesitant contributors: those who answered the reasons for contribution scale and the reasons for non-contribution scale – as they saw that there are sometimes reasons that hinder them from contribution.
2) Non-contributors: those participants who answered only the reasons for non-contribution scale.

Table 1: Arabic and English participants to the online questionnaire

Culture	Level of Contribution	%
Arabic	Hesitant contributors	90.8
	Certain contributors	8.05
	Non-Contributor	1.15
English	Hesitant contributors	74.2
	Certain contributors	6.9
	Non-Contributor	18.9

This study, as discussed above, aimed to collect data about demographic and contextual factors that might impact upon Wikibooks read-writers. The descriptive data of the sample is presented in Table 2 as follow:

Table 2: Descriptive statistics among Arabic and English Wikibooks read-writers

	Religion		Level of Computer-related Education Field			Age level				Education level			Education-related Occupation		ICT Self-Learning		ICT Equipped School		ICT Teacher encouragement		Gender		Education system	
	Yes	No	Low computer-related	Medium computer-related	High computer-related	Younger than 18	18-24	25-34	Older than 35	Pre-University	University	Post-University	Yes	No	Yes	No	Yes	No	Yes	No	Female	Male	Public	Private
English	43.8	56.2	14.8	54.8	30.4	43	25.3	12.7	19	35.5	38.8	25.7	60.1	39.9	92.4	7.6	48.4	51.6	77.7	22.3	29.5	70.5	81.4	18.6
Arabic	95.3	4.7	21	48.8	30.2	46	35.6	9.2	9.2	22.6	60.7	16.7	40.5	59.5	78	22	51.8	48.2	49.3	50.7	23.8	76.2	79.8	20.2

Table 3: Percentages of topics of contribution

Culture	Natural and Hard Sciences				Human and Social Sciences								
	Life sciences	Engineering	Geography	IT & Programming	Business & Economics	History	Literature	Languages	Religion	Humanities	Politics	Sports	Media & Arts
Arabic	17.4	24.4	11.6	26.7	15.1	20.9	24.4	19.8	24.4	15.1	17.4	17.4	18.6
Anglo	20.9	9.3	9.3	31.8	9.3	15.5	20.2	17.1	7.8	13.2	13.2	7.0	13.2

Note: Percentages calculated through dividing the number of contributors in each topic by the number of total contributors (both hesitant and certain contributors).

From Table 3, it can be understood that while Arabic Wikibooks contributors prefer, in general, human & social sciences compared to English counterparts, English Wikibooks contributors are especially interested in information technology and life sciences compared to Arabic counterparts.

In a previous study [39], results of factor Analysis and Varimax rotation which were conducted on the scale responses are reported. Results showed that there are a number of reasons for those approaching and avoiding the contribution to Wikibooks – as open content educational resources [39]. It was found that reasons for contribution include: 1) intrinsic motivations which involve A) enjoyment and B) integrated values, and 2) extrinsic motivations which involve A) external regulations and B) ego-enhancement (both moral rewards & problem solving). While the avoidance motivations include: 1) the negative views toward contextual system, 2) lack of confidence, 3) negative views toward volunteering, 4) distracting interests, negative views toward wikis, and 6) any other reasons and/or excuses that were seen to be irrelevant or not making sense [please refer to 39 for more details about the analysis and results].

In this study, the author aims to explore the differences between Arabic and English participants in relation to the above motivational factors. Results of one-way ANOVA, reported in Table 4, show there are differences between the western English individualists and eastern Arabic collectivists in reasons for motivation (intrinsic and extrinsic as summarized above).

Table 4: Differences in approach and avoidance motivation across Arabic and English cultures

Factor \ Culture	***Descriptive statistics***				**ANOVA**		**Tukey HSD**	
	Arabic (Ar)		**English (En)**					
	M	*SD*	*M*	*SD*	*F*	*p*	***M(Ar)-M(En)***	*p*
Reasons for contribution (Motivation)	3.56	0.56	3.09	0.55	18.22	<0.001	0.47	**<0.001**
1) Intrinsic motivation	4.27	0.62	3.9	0.67	8.18	<0.001	0.36	**<0.001**
A) Enjoyment	3.95	1.01	3.57	0.99	4.18	0.02	0.38	**0.02**
B) Endorsed values	4.49	0.53	4.24	0.62	8.63	<0.001	0.35	**<0.001**
2) Extrinsic motivation	2.85	0.78	2.27	0.74	15.02	<0.001	0.57	**<0.001**
A) External regulation	2.27	1.06	1.95	0.92	2.7	**0.07**		
B) Ego enhancement	3.42	0.77	2.59	0.81	28.33	<0.001	0.83	**<0.001**
a) Moral rewards	3.97	0.81	2.65	0.99	49.6	<0.001	1.32	**<0.001**
b) Problem Solving	2.88	1.04	2.54	0.92	3.56	0.03	0.34	**0.04**
Reasons for non-contribution (Amotivation)	3.37	0.67	3.57	0.61	5.75	<0.001	-0.2	0.06
1) Negative views toward contextual system	3.29	0.99	3.77	0.99	6.25	<0.001	-0.49	**<0.001**
2) Lack of confidence	3.06	0.98	3.11	0.92	2.9	**0.06**		
3) Lack of reward / value for oneself	3.6	0.92	3.77	0.87	3.6	0.03	-0.17	0.35
4) Distracting interests	3.56	0.88	3.02	0.87	11.84	<0.001	0.54	**<0.001**
5) Negative views toward wikis	4.05	0.79	4.26	0.87	1.78	**0.17**		
6) Irrelevant excuses	2.59	1.07	3.49	0.96	22.32	<0.001	-0.81	**<0.001**

From Table 4, a number of inferences can be made: there are significant differences between means of motivational factors across the Arabic and English cultures except *external regulation* factor; and the means of most motivational factors are significantly larger for Arabic participants than English participants, and these differences were larger for extrinsic motivational factors than intrinsic motivational factors. Moreover, there are significant differences between means of amotivational factors across the Arabic and English cultures except *lack of confidence* and *negative views toward wikis* factors. Moreover, the patterns of mean differences differ depending on the factor… More specifically, Arabic participants were more amotivated due to *irrelevant excuses* and *negative views toward contextual systems* than English participants, while English participants were more amotivated due to *distracting interests* than Arabic participants.

Since not only culture is proposed to be affecting motivation / amotivation, but other factors, such as education and ICT skill – as discussed earlier, multiple regressions have been used to identify the "important" independent variables to impact motivation / amotivation. Two types of regression analysis [42] were used: standard regression, followed by stepwise regression [43]. Firstly, standard regression analyses were used to explore the important independent variables that contribute most to the dependent variable (motivation / amotivation – as emerged from factor analysis). After identifying and confirming the 'important' independent variables, stepwise regressions were used on variables that are identified from standard regression. The several runs of standard regression analysis have resulted in significant independent variables that contribute to the motivations (dependent variables). These were found to be: culture, education level, ICT self-learning, teachers encouraging the use of ICT, age and religion. The data were then subjected to a stepwise regression to assess and confirm the order of importance of the significant independent variables. Similarly, several runs of standard regression analysis resulted in statistically significant independent variables that contribute to amotivation (dependent variables). These significant independent variables include culture, education level, ICT self-learning, computer-related education, ICT-equipped schools and teachers encouraging the use of ICT, education-related occupation, gender, and religion. The data were then subjected to a stepwise regression to assess and confirm the order of importance of the significant independent variables. The following Table 5 summarises the results of the stepwise regression analyses:

Table 5: Stepwise Regression results for independent variables that contribute to reasons for (non-)contribution

Factors and the independent variables	Descriptive Statistics		R^2*	*F*	*β**
	Mean	**SD**			
Reasons for contribution (Motivation)	3.28	0.60	0.102	12.039	
Culture					-0.237
Religion					-0.160
1) Intrinsic motivation	4.06	0.68	0.029	6.378	
Culture					-0.170
A) Enjoyment	3.74	1.03		-----	
No variable was available					-----
B) Endorsed values	4.34	0.63	0.103	6.071	
Culture					-.0154
ICT teacher encouragement					-0.180
Age					-0.157
2) Extrinsic motivation	2.49	0.79	0.147	12.223	
Religion					-0.222
Culture					-0.204
Education level					-0.153
A) External regulation	2.08	1.00	0.061	6.892	
Educational level					-0.187
Religion					0.149
B) Ego Enhancement	2.92	0.88	0.229	15.624	
Culture					-0.255
Religion					-0.259
ICT teacher encouragement					-0.169
Age					-0.140
1. Problem solving	2.66	0.98	0.028	6.165	
Culture					-0.167
2. Moral rewards	3.19	1.14	0.278	27.251	
Culture					-0.313
Religion					-0.291
ICT teacher encouragement					0.139

Factors and the independent variables	Descriptive Statistics		R^2*	*F*	*β**
	Mean	**SD**			
Reasons for non-contribution (Amotivation)	3.53	0.63	0.067	8.090	
Culture					0.180
Education-related occupation					-0.154
1. Negative views on contextual system	3.60	1.01	0.078	6.328	
Culture					0.149
ICT-equipped schools					0.158
Education-related occupation					-0.141
2. Lack of confidence	3.13	0.94	0.047	5.541	
Educational level					0.156
Level of computer-related education					0.143
3. Not-valuing voluntarism	3.75	0.88	0.043	5.041	
Culture					0.193
Religion					-0.139
4. Distracting interests	3.24	0.91	0.060	7.153	
Education-related occupation					-0.194
Culture					-0.189
5. Negative views on wikis	4.19	0.84	0.017	3.991	
Culture					0.131
6. Irrelevant excuses	3.26	1.06	0.218	15.573	
Culture					0.334
ICT equipped schools					0.170
Educational level					-0.134

Results, reported in Table 5, show that culture (as indicated by the spoken language) and religion are the important variable and appear to contribute more to the variance of motivational factors than other individual and contextual factors. Moreover, results show that culture and religion are important variable and appear to contribute more to the variance of amotivational factors than other individual and contextual factors. The nature of education or occupation, among other individual factors, contributes to the variance of amotivational factors. The level of ICT equipment in schools, as a contextual factor, contributes to the variance of amotivational factors.

Since there is a clear difference between the two cultures based in percentages of religious to non-religious participants (as reported in Table 2), the author was interested to explore how far there are differences in reasons of motivation for contribution, especially that related to religious reasons. Ranking of means of motivations is presented in Table 6.

Table 6: Ranking of reasons for contributions for English and Arabic participants

Arabic Participants		Items representing reasons for contribution	English Participants	
Ranking	**Mean**		**Ranking**	**Mean**
1	4.79	I believe that information should be free	1	4.52
2	4.62	I contribute because I want to learn	2	4.24
3	**4.44**	**My religious teaching asks me to help others**	**7**	**2.57**
4	4.37	Poor people can use these free books	3	3.97
5	3.95	I want to have fun	4	3.57
6	3.49	I want to express my personal opinions	5	2.72
7	2.94	I'm lonely and have free time	6	2.61
8	2.81	I cannot find other places to publish my work	8	2.47
9	2.51	My friends do so	9	2.19
10	2.02	My teacher asked me to do so	10	1.71

Note: Bold is used to highlight the difference in ranking.

As reported in Table 6, reasons for contribution to Wikibooks follow the same patterns of weight across Arabic and English participants, except the motivation related to religious teaching: it ranks higher for Arabic participants than for English participants.

Study 2

The results of Study 1 showed that there are differences across Arabic and English culture in motivations. In this study, I aimed to explore how individuals from the same cultures (individualists & collectivists), regardless of their spoken languages (English & Arabic), view motivations as self-oriented or others/community-oriented. It is argued that OER motivations are culturally-oriented: the individualist people are argued to be more self-oriented, while the collectivist people are argued to be more others-oriented.

To be able to examine these motivations, I have used the same scale items used in the online questionnaire. However, in this F2F questionnaire participants were asked to identify whether a reason for contribution/non-contribution (a scale item) can be regarded as: 1) self-oriented motivation/self-focused amotivation, 2) others-oriented motivation/eco-focused amotivation, or 3) an ambiguous reason orientation. The participants in the F2F questionnaire study were drawn from the two populations identified in the research: those from *collectivist* nations and those from *individualist* nations. The responses were collected from participants in the central business district (CBD) sites in Adelaide, the capital of South Australia. The CBD has places that attract individuals from different countries. Approaching participants was based on their racial appearance – although such acknowledged limitation. The F2F questionnaire included a question about the country of origin to identify the culture of participants in order to then classify the participants to individualists and collectivists. Participants (N=64) to the questionnaire were from both individualist and collectivist nations, 32: 32. The sample size of 32 from each culture is sufficient to undertake a binomial test [44].

To explore the non-Wikibooks read-writers' opinions on self-oriented and others-oriented reasons for contribution as well as the non-Wikibooks read-writers' opinions on Wikibooks read-writers' self-focused and others/community-focused reasons for non-contribution, Binomial and Chi^2 tests were conducted – as reported in Appendix 3 and Appendix 4. The 'I do not know' answers were treated as missing. Table 7 reports the findings.

Table 7: Non-Wikibooks read-writers' opinions about reasons for OER approach and avoidance

Reasons of OER Approach		
Self-Orientated	Others-Orientated	No-Orientation
▪ I want to have fun. ▪ I believe that information should be free. ▪ I cannot find other places to publish my work. ▪ I'm lonely and have free time. ▪ I want to express my personal opinions. ▪ I contribute because I want to learn.	▪ Poor people can use these free books. ▪ My religious teaching asks me to help others. ▪ Logical and grammatical errors have to be corrected.	▪ My friends do so. ▪ My teacher asked me to do so. ▪ Others do not have the expert knowledge that I have. ▪ There is a lack of information resources in my language.
Reasons of OER Avoidance		
Self-Focused	Eco-Focused	No-Orientation
▪ No financial rewards. ▪ I can't use wiki. ▪ I don't have a knowledge base in any suitable topic. ▪ I prefer reading to writing. ▪ I have other hobbies and interests that take up my time rather than contributing to wiki. ▪ I prefer socialising with family and friends rather than sitting at the computer to contribute. ▪ I do not feel confident. ▪ I prefer to write in my own language. ▪ As this is voluntary work, orders to contribute are not acceptable to me. ▪ It is not my job to write textbooks.	▪ Our educational system (institution) does not (or cannot) adopt this technology as a part of the learning process. ▪ Contribution is useless unless others know of this website. ▪ Our society does not value voluntary work. ▪ Others do not have internet access or do not know of this website.	▪ This is an un-helpful website. ▪ There is no clear structure for textbooks.

The results of the binomial test and Chi^2 test, as shown in Table 7, are very close to each other $\chi^2 = Z^2$. Results reveal that self-oriented reasons for contribution are argued to include motivations relating to mutual benefit and motivations suggesting concern for solving personal problems, while others-oriented reasons for contribution include motivations relating to content and motivations relating to people. Reasons that appeared to be ambiguous relate to social issues or to issues relating to information sharing. Moreover, results reveal that self-focused reasons for non-contribution are argued to include issues of selfishness, lack of confidence, and other interests that distract people from contribution, while eco-focused reasons for non-contribution include motivations relating to the system, or to people around. Reasons that appeared to be ambiguous relate to Wikibooks website itself.

Discussion

Extending the work on cultural differences as explored through the contribution patterns in Wikipedia by Pfeil *et al*. [35], and the cross-cultural studies of motivations to volunteer [see for example 22; 24], this study aimed to explore differences between Arabic collectivists and English individualists in their motivation and amotivation for contribution to open content educational resources, as explored and reported in [39]. To be able to examine cultural differences in OER motivation, a OER read-writers motivation model has been introduced and includes motivations of *approach* and *avoidance*, as well as the *self* and *others* orientations, as presented in Figure 1, as new layers to the SDT model. From the universal perspective, motivation involves tendency to approach or to avoid certain behaviour; but it also involves a conflict between these two tendencies. Exploring the self and others dimensions of approach and avoidance motivation helps exploring differences and similarities between individualist and collectivist practices in open content learning activities (OCLA). The online questionnaire aimed to explore cultural differences (and similarities) of motivation for contribution to OER at the universal level in relation to approach and avoidance motivations, while the face-to-face questionnaire aimed to explore cultural differences (and similarities) in relation to the self and others orientations.

The analysed data of the online questionnaire (Study 1) has uncovered the factors affecting motivation in contributors to Wikibooks, and more specifically the similarities and differences between motivational factors across English and Arabic cultures. In regard to reasons for contribution, Arabic participants were higher than English participants in: enjoyment (intrinsic), integrated values (intrinsic), problem solving/ego enhancement (extrinsic), and moral reward/guilt reduction (extrinsic); but there was no significant difference found in regard to external regulation. Such results are consistent with motivations to volunteer to RWO across cultures – as presented in Appendix 1 and Appendix 2. Such 'no significant difference' between Arabic and English participants in external regulation is consistent with motivations to volunteer to RWO across cultures. This finding explains that both teachers and friends do not play much role in motivating OER Wikibooks users to contribute, and this might also suggest the need to train teachers to engage OER in their learning and teaching practices to promote the use of OER.

Moreover, findings suggest that motivations that include enjoyment, integrated values, problem solving/ego enhancement, and moral reward/guilt reduction are more powerful in engaging OER read-writers than any external pressures from teachers or friends. This implies that teachers should be inspired to be able to inspire others. Arabic participants are more motivated to solve their problems (including the need to publish) than English participants – and such result can be returned to the difficulties in publishing 'internationally' in minor languages because publishers consider publications for minor-language readers are not yield sufficient profit [45]. This suggests that if Arabic individuals are incentivised by informing them that their contributions are their way to publishing their work, more active participation can be achieved.

In relation to reasons for non-contribution, Arabic participants were significantly higher than English participants in their negative views toward contextual system, valueless voluntarism and irrelevant excuses, while English participants were higher than Arabic participants in their avoidance because of distracting interests. But, there were no significant differences observed between Arabic and English participants in relation to lack of confidence and negative views toward wikis. Most Arabic countries have not utilised current information and communication technologies as effectively in education as in the West [46], which is perhaps can be better understood from the level ICT teachers' encouragement. While more than ¾ of English participants saw their teachers support the use of ICT in pedagogy, Arabic participants were as low as 50% saw their teachers did not support the use of ICT. Linking these results to reasons for contribution, it is argued that lack of confidence and negative views toward wikis hinder contribution regardless of the culture of a participant. The role of teachers is significant to encourage students to use ICT, and perhaps this explains why the majority of English participants claimed that they self-taught themselves the use of ICT while 78% of Arabic participants stated that they taught themselves how to use ICT.

Both Arabic and English participants saw their schools are not equipped enough with ICT facilities – and perhaps this can be explained by that more than 75% received their education in public schools. Regardless of how participants see their teachers and their competency in using ICT, the findings suggest that teachers need adequate training to inspire their students for active participation in OCLA. Furthermore, while there might be actual differences in the level of ICT equipment in schools, access to such resources alone does not address issues impacting on the importance learners/students and teachers place on using OCER. It is evident then that the divide is more likely to be social than digital or economic alone. Results reveal that there is higher level of amotivation for contribution (avoidance) among Arabic participants than English participants (although they are also higher in their motivation for contribution to OER Wikibooks than English participants) – which may help explaining the hesitancy in ICT self-learning.

Furthermore, results reveal that the percentage of non-contributors among English participants is larger than what is for Arabic participants. Such a result suggests that to enhance participation, an attention should be given to addressing issues that hinder participation – especially when results show that Arabic participants are amotivated primarily due to unwillingness to participate, while English participants appear to be more amotivated due to inability and being distracted by other interests. Moreover, such results suggest that while Arabic participants are others/community focused as providing explanation for their amotivation, English participants are more self-focused.

Results suggest that when designing OCLA for individualists, more focus should be given to knowledge and skills that can be gained, while for collectivists, activities should focus on problems in societies that can be resolved. Indeed, problem solving activities build skills, but how designers make objectives clear to potential participants is the key for more engagement. Since contribution to OER needs commitment from OER participants, these participants, it could be argued, should enjoy OCLA regardless of their cultures. However, since the 'meaning' of enjoyment can be different across cultures [12], it suggested that to design learning activities for individualists, they should include independent practices for enjoyment, while such activities should depend on group practices to provide enjoyment for collectivists.

One of the interesting findings the pattern of the 10 motivational reasons for contribution to OER is proved to be similar among Arabic and English participants except for those religious reasons, as shown in Table 6. This finding comes consistent with the percentage of religious to non-religious people across the two cultures (as reported in Table 2). Since Oyserman *et al.* [16] argued that collectivists individuals are willing to 'help' as a matter of 'duty' or 'obligation' – as driven from religious principles, while Jacobsen [18] found that in individualist societies, people do value voluntary responsiveness, stimulating those individuals from Arabic culture can be by using some religious verses while to stimulate participation from English culture, a wide range of individual messages can attract participations based on their individual motives.

Among the 'many' factors studied in this online questionnaire study, only a few factors have been shown to have contributed to motivation. These factors include: culture, religion, education level, ICT self-learning, and ICT teacher encouragement. From the holistic view, culture plays a significant role in motivation for contribution / non-contribution to Wikibooks. Furthermore, while it appears that ICT teacher encouragement plays a significant role in motivation for contribution to open educational resources, un-ICT-equipped schools play a role in reasons for non-contribution to OER. It is important to go beyond 'digital divide' [47] as economic/infrastructure barriers [48; 49; 50], to seek for more 'digital opportunities' [51], and to consider the provision of training for unskilled people to satisfy their technical needs [46]. However, ICT training may not be beneficial unless all the components of the educational system are developed [52] including equipped computer laboratories at schools (and computers at home), with internet connections and a curriculum that is well-developed to engage the use of ICT in learning and teaching activities [53].

The results indicate that there are no significant differences between Arabic and English cultures in the lack of confidence and the negative views toward wikis; and at the same time, teachers play a significant role in motivating students. Such findings suggest that teachers should be trained to use ICT and have the awareness of OER and its benefits, to be able to encourage their students to use ICT in their learning beyond 'formal' curriculum – even the schools are not adequately ICT equipped, and this would allow students to enhance their confidence. Moreover, and to achieve sustainable open educational resources, designers of OER initiatives should reward their read-writers by enabling the *understanding*, *enhancement*, *social* networking, *enjoyment*.

The results suggest that Arabic collectivist participants are more motivated by collective goals than English participants, while individualists weigh more benefits for the self than benefits for others – suggesting that motivation to volunteer is rational and deeply affected by values present in the socio-cultural context [54]. Although there is common agreement in motivation-to-volunteer research that a volunteer tends to weight the desire for help motivations [55], volunteers benefit in their own right from volunteering more than they aim to benefit others. Such a result is consistent with Clary *et al.* [23] who found the primary functions of volunteering to be values, career, understanding, enhancement, social, and protective, in which five of these six reasons ensure some kind of self-benefit. Results of this study come consistent with previous studies [56; 57; 58; 59; 60; 61; 62; 63; 64; 65; 66] when it was found that contributors to OSS, OER, OCW show more motivational orientations toward the self than the others/community.

Results of the F2F questionnaires show that both information sharing factor and the social orientation factor for contribution are ambiguous. This result suggests that any encouragement of teachers and friends to share information is part of an internalisation process. At some stage, this can be considered extrinsic, until individuals feel the enjoyment and satisfaction of contribution as integrated values. Furthermore, this result suggests that encouragement from teachers is not received as external regulation when collaborators (students and self-learners) find the process of contribution useful, even though teachers and friends can play a significant role as external regulators. Furthermore, non-Wikibooks read-writers were unable to classify 'My friends do so' and 'My teacher asked me to do so' either as self-oriented or others-oriented. This suggests that both teachers and friends can play a significant role to encourage participation, and at the same time would not perceived as external enforcement.

Results of the F2F questionnaires suggest that a contributor undergoes many mental processes to evaluate how the outcomes of behaviour that benefit themselves first, before benefiting others. Such finding can be explained when the endorsed values include self-oriented reasons (such as 'I believe information should be free'; and 'I contribute because I want to learn') and others-oriented reasons ('Poor people can use free books'), while the moral rewards can include self-oriented goals ('I want to express my personal opinion') and others-oriented goals ('My religious teaching asks me to help others'). This also suggests that the rational thinking process not only includes oneself, but also consideration of others. Results also suggest that a 'problem' is more related to oneself rather than feeling the problems of others – such as publishing barriers and lonliness. Thus, to market and promote contribution, OER initiatives and teachers may need to stress the benefits and usefulness of contribution for oneself.

Most of the factors that contribute to avoidance were seen as self-focused. This result suggests that reasons for non-contribution are related to oneself rather than to issues related to the context or eco-system. Therefore, developing the individual's skills to use the computer and interact with learning technologies may play an important role in increasing contribution to Wikibooks. Arabic Wikibooks read-writers were more amotivated than English Wikibooks read-writers, due to issues related to their context (eco-focused), while English individuals were amotivated more than Arabic Wikibooks read-writers due to issues related to the self (self-focused) such as self-centeredness and other interests. This result suggests that Arabic participants may contribute more if their educational systems do not hold aspects that do not encourage them to contribute, while English participants appear to prefer their personal interests over contribution to Wikibooks.

To conclude, an evaluation process (of benefits a person might get from their volunteering against the time and effort they spend and the benefits others might get) plays a significant role in motivating OER users to contribute to open content educational resources. OCER contributors tend to contribute more to solve their personal problems rather than any altruistic goals (whether helping others or developing and sharing content with others). However, these mental processes of evaluation of benefits from OER participation are also affected by the culture of those contributors. Promoting contributions from OER users should consider their cultures as discussed in this paper.

Study one and study two have shown that the OER read-writers motivational model considers the self and the others/community orientations, through the lens of intrinsic and extrinsic motivation and amotivation. Such a model allows for the examination of differences in individualist and collectivist cultures. Intrinsic and extrinsic motivations involve both self-oriented goals and others oriented goals, supporting the balance between both while contributing to OER. This finding highlights the need for further research exploring the optimal 'balance' between self-oriented goals and others-oriented goals.

The findings from this study suggest that OER motivation is contextual. Educators and lecturers play a significant role in creating a readiness for sharing information. Trained teachers need to understand that while both intrinsic and extrinsic factors play a role in motivating potential OER contributors, users are unlikely to contribute unless they perceive that the benefits they gain are worth the time and effort they allocate in OER participation. The findings from this study suggest that incentives that motivate English users/students may be different from those suitable for Arabic users/students. The different motivations, as explored in this research, suggest that OCLA suit different users with different needs and different cultural backgrounds. However, it is important to ensure that learning objectives and promotional messages are clear enough to inspire potential OCER contributors. Playfulness should be considered when designing those activities, but at the same time, such activities should meet the values of different users. In general, any activity should add to individuals' skills so that they perceive the value of their contribution.

Although SDT model demonstrates its applicability for both individualistic Western cultures [67] and collectivistic non-Western cultures [68], the SDT theory in instances of OER motivational responses has needed careful adaptation to capture cultural variation in motivational responses. The findings of this current research suggest that the OER read-writers motivational model, as demonstrated in Figure 1, has the capacity to explore cultural differences (individualist and collectivist cultures) in *intrinsic* and *extrinsic* OER motivation and *amotivation*, and their goal orientations whether *self-orientated* or *others-orientated*. The flexibility and simplicity of the proposed model which was used as a 'methodological tool' provided systematic means of investigation of OER motivation across individualist and collectivist cultures. Future research should however give more attention to the self-orientated and others-orientated OER motivations when OER are used in formal education settings.

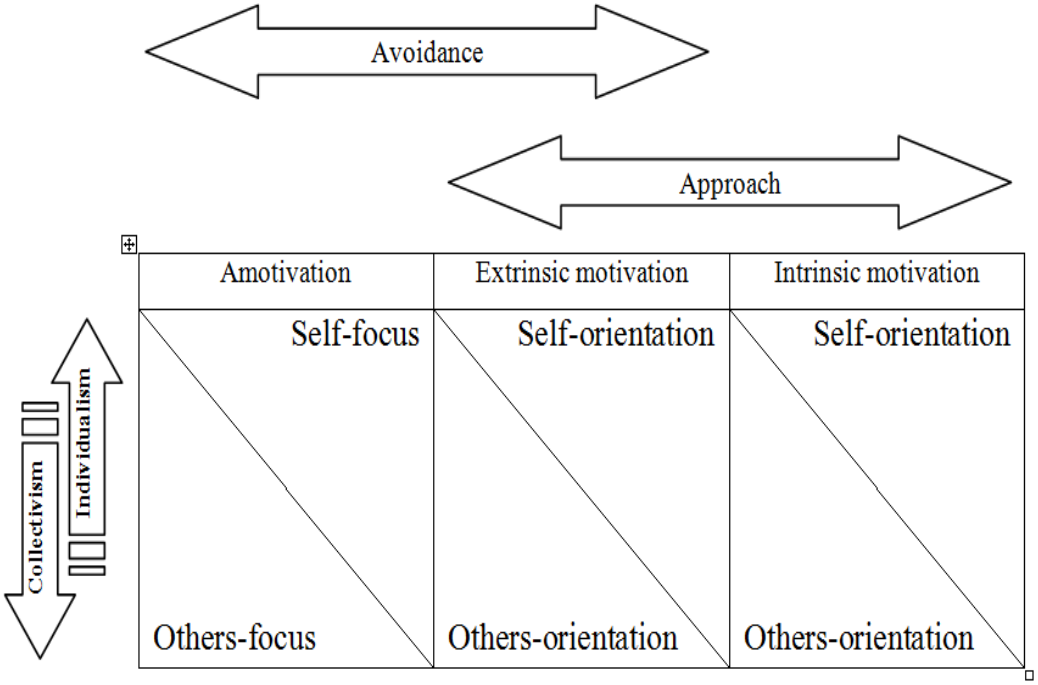

Figure 3: Self and others orientations in motivations across individualist and collectivist cultures

To conclude, all individuals, regardless of their cultures, approach and avoid certain behaviours, including OER participation, but for most of the time face conflicts between the two tendencies. All individuals have intrinsic and extrinsic motivations. These motivations are reshaped by individual and contextual values or regulations. Similar to motivation, amotivation can be explained by issues related to the self and issues related to others or the community (eco). All individuals share self-orientated and others-orientated regulations. However, such regulations can be seen and explained to be different between individualist and collectivist OER contributors – taking into account their values/goals, individual differences and contextual factors. Future research should explore levels of participation across time when cultural and individual aspects are considered in designing open content learning activities.

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Appendices

Appendix 1: Volunteer functions across individualist and collectivist nations

Motivations	Volunteers from Minneapolis, USA			Volunteers from Hong Kong		
	Rank	Mean	Alpha	Rank	Mean	Alpha
Career	4	4.54	.89	4	.60	.82
Enhancement	3	4.64	.84	5	.49	.73
Protective	5	3.25	.81	6	.45	.70
Social	**6**	**2.95**	**.83**	**1**	**.78**	**.91**
Value	1	5.37	.80	2	.68	.86
Understanding	2	5.13	.81	3	.64	.83
Source	Clary *et al.* [23]			Wu, Lo and Liu [22]		

Appendix 2: The self-oriented (S) and others-oriented (O) reasons for volunteering across six countries[1]

Statement	Total	S / O	USA (91)	Canada (80)	US+CA (85)	Belgium (75)	Finland (63)	BE+FI (69)	Japan (46)	China (20)	JP+CH (33)
Work is important	4.18	S	4.32	4.29	4.31	4.19	4.50	4.35	3.79	3.87	3.83
Volunteering gives new perspective	3.95	S	4.01	4.05	4.03	3.46	3.99	3.73	4.40	3.90	4.15
Volunteering makes me feel better	3.93	S	4.02	4.01	4.02	3.64	4.08	3.86	3.63	4.03	3.83
Learn more about the case	3.52	S	3.63	3.72	3.68	3.42	3.76	3.59	3.38	3.21	3.30
Build up the CV[2]	3.46	S	3.67	3.85	3.76	3.26	2.80	3.03	2.84	3.65	3.24
Foot in door at paid employment	3.29	S	3.54	3.81	3.68	3.15	2.99	3.07	2.46	3.19	2.83
Good escape from own trouble	2.46	S	3.00	2.81	2.91	2.35	2.07	2.21	2.02	1.97	2.00
Total Self-oriented reasons	3.54		3.74	3.79	3.77	3.35	3.46	3.40	3.22	3.40	3.31
Important to help others	4.29	O	4.36	4.35	4.36	4.22	4.54	4.38	4.12	4.11	4.12
Make new friends	3.60	O	3.37	3.50	3.44	3.53	3.50	3.52	3.67	4.04	3.86
New contact that help business career	3.54	O	3.58	3.75	3.67	3.19	3.24	3.22	3.61	3.70	3.66
Influence close environment	3.21	O	3.39	3.22	3.31	3.52	3.13	3.33	2.30	3.21	2.76
Friends volunteer	3.20	O	3.36	3.18	3.27	3.30	3.26	3.28	2.88	3.07	2.98
Advised to do so	2.80	O	3.09	2.12	2.61	2.49	2.72	2.61	2.88	2.88	2.88
Relieves guilt	2.66	O	2.83	2.55	2.69	1.99	2.88	2.44	2.51	2.51	2.51
Total Others-oriented reasons	3.33		3.43	3.24	3.33	3.18	3.32	3.25	3.14	3.36	3.25

1: Hustinx et al. [21, pp. 365-366] findings are presented in the grey-shaded cells. However, the author has adapted the presentation of their findings to demonstrate the self-oriented and others-oriented reasons for volunteering which were re-calculated from their published findings, as well as introducing means of reasons for volunteering across the 3 levels (high, midium, low) of individualism – as presented in non-grey-shaded cells.
2: An adapted table from Hustinx *et al.* (2010, pp. 365-366), of which the two items (Put on CV for job application & Put on CV for admission education) are merged together to make this adapted item.

Appendix 3: The non-Wikibooks read-writers' opinions about reasons for contribution

Reasons for contributions	Category		Binomial Test		Chi-square test	
	Orientation	N	Observed Probability	*p*	Chi^2	*p*
I want to have fun.	Self-oriented	63	0.984			
	Others-oriented	1	0.02			
	Total	64	1.00	< 0.001	60.06	< 0.001
My friends do so.	Self-oriented	25	0.39			
	Others-oriented	39	0.61			
	Total	64	1.00	0.10	3.06	0.08
Poor people can use these free books.	Self-oriented	17	0.27			
	Others-oriented	46	0.73			
	Total	63	1.00	< 0.001	13.35	< 0.001
My teacher asked me to do so.	Self-oriented	25	0.44			
	Others-oriented	32	0.56			
	Total	57	1.00	0.43	0.86	0.35
I believe that information should be free.	Self-oriented	41	0.68			
	Others-oriented	19	0.32			
	Total	60	1.00	0.01	8.07	0.01
My religious teaching asks me to help others.	Self-oriented	18	0.30			
	Others-oriented	43	0.71			
	Total	61	1.00	0.00	10.25	0.00
Others do not have the expert knowledge that I have.	Self-oriented	26	0.49			
	Others-oriented	27	0.51			
	Total	53	1.00	1.00	0.02	0.89
I cannot find other places to publish my work	Self-oriented	45	0.75			
	Others-oriented	15	0.25			
	Total	60	1.00	< 0.001	15.00	< 0.001
I'm lonely and have free time	Self-oriented	57	0.91			
	Others-oriented	6	0.10			
	Total	63	1.00	< 0.001	41.29	< 0.001
I want to express my personal opinions.	Self-oriented	55	0.86			
	Others-oriented	9	0.14			
	Total	64	1.00	< 0.001	33.06	< 0.001
Logical and grammatical errors have to be corrected.	Self-oriented	19	0.33			
	Others-oriented	38	0.67			
	Total	57	1.00	0.02	6.33	0.01
There is a lack of information resources in my language.	Self-oriented	26	0.50			
	Others-oriented	26	0.50			
	Total	52	1.00	1.00	0.00	1.00
I contribute because I want to learn.	Self-oriented	58	0.94			
	Others-oriented	4	0.07			
	Total	62	1.00	< 0.001	47.03	< 0.001

Appendix 4: The non-Wikibooks read-writers' opinions about reasons for non-contribution

Reasons for non-contribution	Category		Binomial Test		Chi-square test	
	Orientation	N	Observed Probability	*p*	Chi^2	*p*
No financial reward.	Self-focused	43	0.70			
	Eco-focused	18	0.30			
	Total	61	1.00	.002	10.25	< 0.001
I can't use wiki.	Self-focused	51	0.84			
	Eco-focused	10	0.16			
	Total	61	1.00	< 0.001	27.56	< 0.001
This is an un-helpful website.	Self-focused	31	0.54			
	Eco-focused	26	0.46			
	Total	57	1.00	.597	0.44	0.51
Our educational system (institution) does not (or cannot) adopt this technology as a part of the learning process.	Self-focused	15	0.25			
	Eco-focused	46	0.75			
	Total	61	1.00	< 0.001	15.75	< 0.001
I don't have a knowledge base in any suitable topic.	Self-focused	51	0.84			
	Eco-focused	10	0.16			
	Total	61	1.00	< 0.001	27.56	< 0.001
Contribution is useless unless others know of this website.	Self-focused	14	0.23			
	Eco-focused	47	0.77			
	Total	61	1.00	< 0.001	17.85	< 0.001
Our society does not value voluntary work.	Self-focused	15	0.25			
	Eco-focused	46	0.75			
	Total	61	1.00	< 0.001	15.75	< 0.001
I prefer reading to writing.	Self-focused	60	0.94			
	Eco-focused	4	0.06			
	Total	64	1.00	.000	49.00	< 0.001
There is no clear structure for textbooks.	Self-focused	25	0.44			
	Eco-focused	32	0.56			
	Total	57	1.00	.427	0.86	0.35
I have other hobbies and interests that take up my time rather than contributing to wiki.	Self-focused	51	0.80			
	Eco-focused	13	0.20			
	Total	64	1.00	< 0.001	22.56	< 0.001
I prefer socialising with family and friends rather than sitting on the computer to contribute.	Self-focused	45	0.71			
	Eco-focused	18	0.29			
	Total	63	1.00	.001	11.57	< 0.001
Others do not have internet access or do not know of this website.	Self-focused	7	0.11			
	Eco-focused	54	0.89			
	Total	61	1.00	< 0.001	36.21	< 0.001
I do not feel confident.	Self-focused	58	0.91			
	Eco-focused	6	0.09			
	Total	64	1.00	< 0.001	42.25	< 0.001
I prefer to write in my own language.	Self-focused	57	0.90			
	Eco-focused	6	0.10			
	Total	63	1.00	< 0.001	41.29	< 0.001
As this is voluntary work, orders to contribute are not acceptable to me.	Self-focused	47	0.80			
	Eco-focused	12	0.20			
	Total	59	1.00	< 0.001	20.76	< 0.001
It is not my job to write textbooks.	Self-focused	56	0.89			
	Eco-focused	7	0.11			
	Total	63	1.00	< 0.001	38.11	< 0.001