Full research paper

FACTOR ANALYSIS ON THE MOTIVATION FOR EXTENSIVE READING QUESTIONNAIRE

Helta Anggia[1, 2]✉
Anita Habók[3, 4, 5]

[1]Doctoral School of Education, University of Szeged, Hungary

[2]Universitas Bandar Lampung, Bandar Lampung, Indonesia

[3]Institute of Education, University of Szeged, Hungary

[4]MTA-SZTE Digital Learning Technologies Research Group, University of Szeged, Hungary

[5]Digital Learning Technologies Incubation Research Group, University of Szeged, Hungary

✉ helta.anggia@edu.u-szeged.hu

ABSTRACT

This study examined the factors adapted from the Motivation for Reading Questionnaire. We considered eight dimensions (Self-Efficacy, Reading Challenge, Reading Curiosity, Reading Involvement, Importance of Reading, Recognition for Reading, Reading for Grades, and Social Reasons for Reading). In addition, we included some items based on the extensive reading, principles, and technology acceptance model. The study recruited 558 undergraduate students of English as a foreign language in Indonesia via Google Forms. The structure of the questionnaire was validated using exploratory and confirmatory factor analyses. To determine the dependability of the instrument, internal consistency reliabilities of the instrument as a whole and per factor were calculated. We computed the average variance extracted and the Heterotrait-Monotrait Ratio of Correlation to determine convergent and discriminant validities. The results led to the omission of six items with loading values < 0.50. The omissions included one item for Reading Involvement (0.42) and five items for Social Reasons for Reading (0.47; 0.43; n/s.; n/s.; and n/s.). Lastly, the study presented the significance of the results and directions for future studies.

KEYWORDS

Confirmatory factor analysis, exploratory factor analysis, extensive reading, motivation, reading

HOW TO CITE

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Highlights

- *The exploratory factor analysis helps the authors to identify the factors of the adapted questionnaire and the relevant items to the context.*
- *The confirmatory factor analysis ensures the validity of the 44 items of the adapted questionnaire.*
- *The average variance extracted (AVE) analysis indicated an acceptable convergent validity since items of the same factors loaded significantly.*
- *The heterotrait-monotrait (HTMT) analysis indicated a significant discriminant validity since the factors did not overlap.*

INTRODUCTION

In recent decades, Extensive reading has been identified as one of the most effective strategies for motivating university students to read (Renandya, 2007). Although the primary concern of teaching extensive reading has been motivation for reading (Chanthap and Wasanasomsithi, 2019; Hagley, 2017; Hendriwanto and Kurniati, 2019; Rezaee and Farahian, 2020; Shurentsetseg, Nandintsesteg and Nyamsuren, 2015), no instrument that assesses motivation for reading following an extensive reading intervention has been explicitly constructed under the principles of extensive reading. One of the most prominent instruments for reading motivation is the motivation for reading questionnaire (MRQ) developed by Wigfield and Guthrie (1997). Despite being validated in primary schools and employing multidimensional factors to measure reading motivation, the construct of the instrument requires revision. It lacks evidence of the large reading program's effects. This is understandable because Wigfield and Guthrie's background on reading motivation is more broad than specialized, such as EFL reading motivation.

Additionally, as digital learning has grown in popularity, extensive reading has shifted to an online format that uses technology as a medium of instruction (Cote and Milliner, 2015; Matsuda, 2020). As a result, the use of technology has become inevitable to extensive reading programs. Therefore, one may infer that the current constructs of MRQ must be adjusted following the technology acceptance model (TAM) proposed by Davis et al. (1989), who established the potential

relationship between perceived ease of use and perceived usefulness of technology and one's motivation to use the technology in a learning process. Meanwhile, Day (2015) established the famous ten principles of extensive reading based on the motivational aspects of students in extensive reading. The principles contain the intrinsic and extrinsic motivation aspects that Deci and Ryan (2000) put forward. In Indonesia, Higher education institutions have begun to pay attention to extensive reading, particularly programs that focus on English language learning. Moreover, the Indonesian government has provided support for extensive reading through Gerakan Literasi Nasional (National Literacy Movement) (Anandari and Iswandari, 2019). Consequently, the current study proposed a recontextualization of the MRQ using TAM and extensive reading principles to establish a robust assessment of students' reading motivation after an extensive reading intervention in the Indonesian EFL context.

Specifically, the study aims to analyse the MRQ components in light of Day (2015) and Davis (1989) theories to develop and validate a new measure of university students' motivation for reading following an extensive reading intervention. The first step was that we described the context that prompted the design of a reconstructed measure of reading motivation, explained the questionnaire item modification and development phase, and subsequently validated the data and made justification.

THEORETICAL BACKGROUND

Motivation for EFL Reading

Since Deci and Ryan (1985) introduced the initial concept of self-determination theory (SDT), the theory of motivation has substantially advanced. Apart from the SDT scales and intrinsic and extrinsic motivation, which evolved into a meta-theory of motivation, certain areas of expansion in motivation theory included expectancy value (Wigfield and Eccles, 2000), task avoidance and procrastination theory (Ferrari et al., 1995), TAM (Davis, 1989), and self-related beliefs (Habók et al., 2020). These concepts are pervasive and are adopted in many areas of learning motivation today, such as motivation for reading, particularly EFL reading motivation (Mori, 2002; Takase, 2007; Kim, 2011; Protacio, 2012; Park, 2015; Dakhi, 2018; Pirih, 2019). Similarly, this study integrated most of the theories mentioned above to rethink the construction of the MRQ (Wigfield and Guthrie, 1997) to create a more precise motivation for an extensive reading questionnaire following an extensive online reading intervention. We discussed the related theories as follows.

Initially, expectancy value theory may be considered crucial concerning how one's motivation is melded in relation to EFL reading (Wigfield and Eccles, 2000). Like many other subjects that involve one's ability-related beliefs, examining the influence of the competence beliefs of students, which have evolved over their school years, on whether or not to engage in positive reading behaviour during university is interesting. The findings that the competence belief of children decreases over school years may be logical now (Wigfield, 1994; Wolgast, 2018). Similarly, Tuominen et al. (2020) discovered that children who are transitioning from elementary to lower secondary schools experienced a stable positive achievement motivation. The authors also found that some students avoided tasks due to low competency. This finding reveals students' school-year competence beliefs. Long-term analysis of university students' EFL reading motivation will be fascinating because they vary in competence belief and task value representation. Subjective task values, such as the desire to perform well (attainment value), belief in future benefits (utility value), intrinsic motivation to do something (intrinsic value), and self-assessment of energy required to perform an activity (cost), play a significant role in determining one's future action (Wigfield and Eccles, 2000). The effect of the diverse expectancy values of university students on learning motivation, particularly in EFL reading, receives little attention and requires further studies.

Procrastination and task avoidance are also other facets of learning motivation that have received less scholarly attention. Ferrari et al. (1995) discussed the association among procrastination, task avoidance, and various factors such as perfectionism, low self-esteem, anxiety, achievement motivation, and intelligence. Although procrastination is intuitively associated with negative attitudes toward a particular task or assignment, Ferrari et al. (1995) found no positive association between procrastination and the majority of previously identified factors such as anxiety, negative achievement motivation, and low intelligence. In EFL reading, students' procrastination may be due to perfectionism in comprehending reading materials.

Another aspect of one's desire to engage in extensive online reading is the involvement of technology. Davis (1989) proposed that perceived ease of use and perceived usefulness of a particular technology influence the future actions of individuals. Furthermore, in his comprehensive elaboration, Davis proposed that beliefs and attitudes are co-determinants of action execution. Thus, the lack of ability-related beliefs in using a particular technology may decrease one's desire to read extensively via online technology.

The last aspect discussed is self-related beliefs. Habók et al. (2020) suggested that academic motivation mediates between self-related beliefs and academic achievement and vice versa. Academic motivation can boost self-esteem and academic achievement. Self-related ideas can motivate students to get good marks. This study examined how self-related beliefs affect online English reading. We examined how self-efficacy and self-concept, which construct self-related beliefs, influence academic motivation. Self-efficacy in online reading and reading self-concept are key to understanding self-related ideas influencing reading motivation. The subsequent discussion demonstrates the breadth of motivational theories applicable to reading motivation, particularly in EFL reading. We regard them as essential aspects of the basis of this study.

Motivation for Reading Questionnaire

Recent instruments used to assess motivation for reading are based on the Motivation for Reading Questionnaire (MRQ) by Wigfield and Guthrie (1997), who developed MRQ to predict the amount and breadth of reading for elementary school pupils in grades 3 to 5. Self-efficacy, intrinsic and extrinsic motivation and, learning goals, and social motivation were

discovered from questionnaire items. Self-efficacy is pupils' ability-related beliefs about their reading abilities. Learning goals integrate subjective task values, whereas intrinsic and extrinsic motivation refers to internal and external influences that push children to read. Children read because of social drive. Children read to socialize with friends and family.

Wigfield and Guthrie (1997) identified 11 dimensions behind the three core constructs of the MRQ. Reading efficacy (three items) and reading challenge (five items) are components of the self-efficacy concept. The first indicates the beliefs of students with respect to self-reported reading ability, whereas the second is intended to reveal the internal motivation to read challenging text. Reading Curiosity (six items) and Reading Involvement (six items) are then designed to elicit information about students' intrinsic motivations due to their interests. Afterward, the Importance of Reading (two items) reflects pupils' perceptions of the importance of reading for future benefits. Although Reading Work Avoidance (four items) elucidates the reading motivation of students beyond positive performance goals, Competition in Reading (six items), Recognition for Reading (five items), and Reading for Grades (four items) are components of extrinsic motivation, which elucidates the external drive that motivates students to read. Finally, Social Reasons for Reading (seven items) and Compliance (five items) are factors of social motivation that contribute to students' use of reading as a means of social interaction. Wigfield and Guthrie (1997) viewed the MRQ as a tool that is capable of eliciting information regarding the multidimensionality of fourth- and fifth-grade elementary school students and evaluated the success of a particular intervention on third-grade students.

SDT (Ryan and Deci, 2000) and self-efficacy theory (Bandura, 1977; Bandura, 1982) are two theories that support the development of the MRQ. Expanding the MRQ items for the abovementioned structures in light of current educational and technological developments is seemingly critical to the field of extensive reading.

Assessment Tools for Measuring Motivation for Reading

Despite the claim that reading motivation in adults is most likely driven by intrinsic motivation and self-regulation, reading motivation during childhood may influence that of adults' motivation (Schutte and Malouff, 2007). Moreover, children's reading motivation may impact adult reading motivation. More research is needed to determine adult reading's full potential. The next section discusses reading MRQ questionnaires. We study the interaction between adult's and children's reading motives and a possible online reading component. The study criticizes the MRQ.

The first measurement is the motivation for the online reading questionnaire (MORQ), which omits several MRQ aspects deemed irrelevant for online reading (Forzani et al., 2020). In the case of extensive online reading, where the teacher controls reading, various dimensions, such as recognition and competitiveness, are considered due to LMS reports on websites that display students' reading progress and self-motivation to compete with their classmates. The MORQ comprises five items organized into four dimensions: curiosity, value, self-efficacy, and self-improvement beliefs. Several characteristics of the MRQ, such as recognition, competition, compliance, and avoidance, are omitted due to the concentration of MORQ in online reading. Simultaneously, the social part of motivation is ignored.

The second questionnaire is the Adult Reading Motivation Measurement (ARMM), which is similar to the MRQ in its multidimensionality (Davis et al., 2020). The hierarchical dimensions of the questionnaire enable it to examine various characteristics of reading motivation, particularly in adolescents. This restriction of the questionnaire can also be used to explain the limitations of the MRQ. Both questionnaires cannot distinguish between school subjects, fiction or non-fiction, and digital or paper reading. However, MORQ is distinguished from MRQ in that the MRQ is geared toward secondary school students instead of those in elementary school. Teachers require an instrument for reading assessment that may be used a few times throughout the semester to assist students in developing a sense of competence and proficiency in reading. MORQ and ARMM demonstrate how the present study may modify the MRQ subscales for the current questionnaire.

Out of the abovementioned prominent questionnaires, many researchers developed instruments based on the dimensions of the MRQ. However, the MRQ continues to leave avenues for further exploration. According to Davis et al. (2020), the MRQ features several limitations with respect to utility as an instrument for elucidating the motivation of students for reading, its small sample size, and the proclivity of motivation researchers to replicate it using an abbreviated version with 18 items instead of the original 53 items. In other words, the creators of other instruments identify areas for improvement relative to MRQ and bridge the gap by validating the questionnaire using larger sample sizes and by including the dimensions in their replication. In addition, (Davis et al., 2020) underlined the importance of researchers who are developing measures for reading motivation that apply to printed and online reading. This notion indicates that researchers on reading motivation have begun to pay special attention to the measurement of online reading motivation.

Additionally, Neugebauer and Fujimoto (2020) detailed several criticisms of the intrinsic motivation component of the MRQ as being ambiguous. As many contend, the challenge subscale of the MRQ was separate from other components with respect to intrinsic motivation; others believe that challenge was a precedent part of the motivation that should be excluded from intrinsic motivation. We also noted that Wigfield and Guthrie (1997) contradicted Wigfield and Guthrie (1995)including intrinsic and extrinsic motivations for reading, perceptions of reading efficacy, social aspects of reading, and reading disincentives. Aa 82-item questionnaire was developed to measure each dimension, with several items assessing each dimension. The questionnaire was completed by 105 fourth- and fifth-grade children in southern Maryland. Factor analyses showed that some of the proposed dimensions were clearly defined, whereas others were not. Several of the dimensions

were correlated with children's book reading frequency in a school-based reading program. The dimensions that appear to be the most reliable include Reading Efficacy, Reading Challenge, Curiosity, Aesthetic Enjoyment, Recognition, Social, and Competition. A revised version of the questionnaire based on the statistical analyses was developed. (Contains 48 references and five tables of data. The original version of the Motivations for Reading Questionnaire is attached. because the first, but not the second, included the importance of reading to intrinsic motivation. Thus, developers of instruments should clarify this inconsistency, especially those who intend to develop instruments to measure the motivation for reading among older learners.

Research Question

This study established the validity of the Motivation for Extensive Reading Questionnaire (MERQ) for 558 undergraduate students of three Indonesian universities. The objective was to determine whether the questionnaire's structures adequately characterize the dimensions of university students' motivation for reading. We assumed that the motivation subscales were classified into eight categories (Self-Efficacy, Reading Challenge, Reading Curiosity, Reading Involvement, Importance of Reading, Recognition for Reading, Reading for Grades, and Social Reasons for Reading), including extensive reading principles and TAM.

METHOD

Participants

The study involved 558 students from three universities in Indonesia (Table 1). From the total sample, 204 students were initially instructed to fill in the questionnaire, and the questionnaire results were analysed using the exploratory factor analysis (EFA). The remaining 354 students were instructed to fill in the questionnaire, and the results were analysed using the confirmatory factor analysis (CFA). The students had been actively learning English since they enrolled in their colleges' English education programmes 2.5 years ago. They had been learning English since primary school but had not used it because it is a foreign language in Indonesia.

Active Year of Learning English	Gender		Total
	Male	Female	
3	200	358	558

Table 1: Characteristics of the sample

Instrument

The Motivation for Extensive Reading Questionnaire (MERQ) was developed using a three-step process. Initially, we established a theoretical foundation for our adaptation of the MRQ. Second, we reduced the subscales and items that were less correlated based on the university context in Indonesia and the age level of the participants. Afterward, we added several pertinent items in light of the extensive reading principles of Day (2015) and the TAM by Davis (1989). Finally, we examined the questionnaire as a whole and fitted it to the remaining MRQ constructs relevant to the study context.

Design

The Institutional Review Board (IRB) of the Doctoral School of Education at the University of Szeged officially approved the research. All participants provided their informed consent, indicating that they accepted to participate in the study.

With the assistance of individual instructors, the MERQ was delivered online to 204 students at the three universities. Given that the measure was developed for EFL students, we limited the sample to individuals enrolled in programs that emphasize studying the English language. Students spent 20 minutes in one session supervised by instructors. The sole responsibility of the instructors was to ensure that each student completed the self-reported questionnaire within the time allotted without any interference. The instructors spent time training students on completing the questionnaire and responding to any questions about the items. After that, we ran an EFA on the students' test results. After reducing several insignificant items, we tested the remaining items on another 354 students through an online questionnaire using Google Form for a CFA test.

Data Analysis

Before conducting the multivariate analysis, we conducted a pre-analysis stage by checking the multivariate normality and linearity of the data set (Byrne, 2005). This stage was conducted to check for possible redundancy among the items that may measure the same latent constructs of the proposed scales in the questionnaire using an inter-item correlation matrix (Cohen et al., 2013; Cohen, 1988). In the long run, if we find correlational overlaps among items, the pre-analysis stage may lead to item deletion.

In analysing the questionnaire data, exploratory factor analysis(EFA) was employed to check the dimensionality of the instrument, which was tested on 204 students. We used the Statistical Package for Social Sciences (SPSS 25) at this stage. The assumed subscales was proposed before undertaking the EFA process. EFA was used to check the rotated factor matrix of the data model and displayed possible item deletion due to low factor loadings (i.e., less than 0.5).

To confirm the EFA result, a confirmatory factor analysis (CFA) was performed to test the results obtained from another group of 354 students. We examined the model fit criteria, such as the comparative fit index (CFI), the Tucker–Lewis index (TLI), and the root mean square error of approximation (RMSEA). Verifying the model fit of the data is essential to determine whether the data are plausible (Hair et al., 2018). At the same time, we checked the instrument's reliability using inter-item and composite reliability to determine the consistency of responses toward the items in the instrument. Simultaneously, Discriminant and convergent validity were investigated to ensure whether the items of the same construct build on the construct itself and to explore whether the items of a construct did not build on other constructs.

RESULTS

EFA

To determine the dimensions of the adapted instrument, we conducted EFA. Building on (Hair et al., 2018), we decided to eliminate items with loadings of less than 0.50 because they were unlikely to be significant in loading the factors of the questionnaire. We omitted six items from the questionnaire with loading values of < 0.50. The omitted items included one for Reading Involvement (I feel like I make friends with people in good books) and five for Social Reasons for Reading items (I often read to my brother or my sister; I like to make contact with the authors of my reading materials; I like to help my friends with their schoolwork in reading; I talk to my friends about what I am reading; and My friends and I like to trade things to read). Only one of the previously added items was omitted (I like to make contact with the authors of my reading materials). The rest of the five items were the original ones of the adapted MRQ. In general, we eliminated these items because they did not contribute to the structure of the instrument. As a result, the remaining 44 items belonging to 8 previously proposed sub-scales were suitable for confirmation through CFA (Appendix 1), which is the subsequent sequential step.

CFA

CFA was used to validate the structure of the MERQ, which resulted in a model fit that can be used to explain the fitness of the model. All observed items loaded significantly based on the loading judgments' characteristics (Hair et al., 2018). The standardized estimate of the factor loadings ranged from 0.65 to 0.85 with a significance level of 0.01, which indicates that all items were acceptable. The fit indices of the questionnaire for each factor were examined. Table 2 summarizes the fit indices for each factor. All the items remained in the CFA because the model fitted the data well. However, the RMSEA of some of the partial models exceeds the recommended cut-off values, such as Reading Efficacy > 0.08, Importance of Reading > 0.08, and Recognition for Reading > 0.08. This happens probably because of the small sample size of the study. We expect that in the future, we can add more samples to refine the root mean square error approximation and improve the fitness index of the models. Moreover, other than RMSEA, the other fit indices of the partial models, such as CFI and TLI indicate a good model fit.

Finally, to ensure the fitness of the model, we checked the fit of the model to the structure. Table 3 displays the fit model of the questionnaire. Overall, the CFA test indicated a good model fit. These results indicated that overall, our instrument has a good fit index.

Constructs	Chi-square	*df*	*p* <	CFI	TLI	RMSEA
Reading Efficacy	8.19	2	0.01	0.99	0.97	0.09
Reading Challenge	27.9	9	0.00	0.98	0.97	0.07
Reading Curiosity	121	35	0.00	0.95	0.93	0.08
Reading Involvement	36.9	20	0.01	0.99	0.99	0.04
Importance of Reading	7.85	2	0.02	0.98	0.94	0.12
Recognition for Reading	28.2	5	0.17	0.96	0.93	0.11
Reading for Grades	0.00	0	n/s	1.00	1.00	0.00
Social Reasons for Reading	0.29	2	0.86	1.00	1.01	0.00

Table 2: Goodness of fit of questionnaire subscales

Chi-square	*df*	*p* <	CFI	TLI	RMSEA	Estimator
1604	874	0.001	0.935	0.930	0.048	ML

Table 3: Goodness of fit of the questionnaire

Reliability

The internal consistency reliabilities of the instrument were calculated as a whole and for each factor. Cronbach's alpha and omega coefficients of the instrument as a whole were acceptable (0.97 and 0.98, respectively). At the same time, Cronbach's alpha and omega coefficients for each factor were within acceptable ranges from 0.82 to 0.97 (Table 4), which indicated satisfactory reliabilities. All the factors suggested equal satisfactory reliabilities.

Constructs	CRB	CR
Reading Efficacy	0.97	0.88
Reading Challenge	0.89	0.90
Reading Curiosity	0.91	0.91
Reading Involvement	0.93	0.93
Importance of Reading	0.83	0.83
Recognition for Reading	0.90	0.90
Reading for Grades	0.82	0.82
Social Reasons for Reading	0.90	0.90

Table 4: Internal consistency reliability and composite reliability of each factor of the questionnaire

Validity

To verify the convergent validity of the scale, we ran average variance extracted (AVE). The results indicated that convergent validity was medium, ranging from 0.51 to 0.66. We assume that these medium AVE values are acceptable, because the majority of the composite reliabilities of

the factors exceed 0.60 (Fornell and Larcker, 1981). As a result, the study established convergent validity.

The heterotrait-monotrait (HTMT) ratio was used to determine discriminant validity (Henseler et al., 2015). Table 5 summarizes the results. The values varied between 0.05 and 0.94. Some of the values are more than 0.85, indicating that discriminant validity has been partially established.

Subscales	AVE	RE	RC	RCU	RI	IOR	RFR	RFG	SRFR
Reading Efficacy	0.66		0.87	0.87	0.85	0.88	0.89	0.89	0.14
Reading Challenge	0.60			0.88	0.92	0.86	0.94	0.74	0.24
Reading Curiosity	0.51				0.86	0.88	0.93	0.78	0.31
Reading Involvement	0.62					0.84	0.87	0.78	0.14
Importance of Reading	0.56						0.90	0.76	0.25
Recognition for Reading	0.52							0.72	0.37
Reading for Grades	0.61								0.05
Social Reasons for Reading	0.52								

Table 5: Convergent validity and discriminant validity

DISCUSSION

This study aimed to develop a more precise measure of university students' motivation for reading in the EFL context, with a particular emphasis on students who have undertaken extensive reading intervention. This instrument was created to support extensive online reading, which has increased in popularity recently. According to the literature, the majority of instructors on extensive reading adapted reading motivation scales from the field of psychology. Among well-known motivation questionnaires for reading, many scholars have referred to the MRQ. Originally composed of 11 subscales with a total of 82 items, this questionnaire was then reduced by its creators to 53 items. The 11 subscales are Reading Efficacy, Reading Challenge, Reading Curiosity, Reading Involvement, Reading Importance, Reading Work Avoidance, Reading for Recognition, Reading Competition, Reading for Grades, Social Reasons for Reading, and Compliance. Additionally, a brief version of the MRQ contains only 18 items. For validation, we adapted the questionnaire with 53 items and used 8 of the 11 subscales of the MRQ.

We omitted reading work avoidance, competition for reading, and compliance from the list of MRQ subscales in light of the contextualization of MRQ with the context of Indonesian universities and the extensive online reading concept. Although Davis et al. (2018) proposed that reading work avoidance is a dimension of students' motivation for reading that should be validated, we refrained from using the subscale because we were primarily interested in the probable beneficial effect of extensive online reading on students' motivation for reading. Although we argued that competition in reading is irrelevant for university students, we also propose that compliance is irrelevant for adult learners who are not required to follow their teachers with respect to extensive reading. By eliminating the three subscales, the total number of items was reduced to 34. Afterward, we added other items based on the TAM concept (Davis, 1989) to determine whether students' motivation for reading was susceptible to the perceived ease of use and usefulness of the online virtual library and any other software packages they may use for extensive reading. Consequently, we added items based on the well-established 10 principles of extensive reading (Day, 2015) because the study focuses on extensive online reading derived from the concept of extensive reading. As a result, 16 items were added, leading to0 items on the Motivation for Extensive Reading Questionnaire (MERQ).

According to the above-mentioned theoretical foundation, the initial number of factors that we proposed was eight, with multiple items for each one: Reading Efficacy (4 items), Reading Challenge (6 items), Reading Curiosity (10 items), Reading Involvement (9 items), Reading for Recognition (5 items), Reading for Social Reasons (9 items), the Importance of Reading (4 items), and Reading for Grades (3 items). The eight subscales are based on three underlying constructs: self-efficacy, intrinsic–extrinsic motivation, and social motivation for reading. According to (Wigfield and Guthrie, 1997), self-efficacy consists of reading efficacy, which indicates a belief one can be successful in reading and reading challenges that lead to the enjoyment of comprehending complicated text (e.g., I learn more from reading than most students in the class and I enjoy reading books about people in different countries). In addition, intrinsic motivation denotes the desire to be good at reading (e.g., I read to learn new information about topics that interest me, I find it easier to manage my reading by using online virtual library [e.g., Xreading, ER-Central, and ReadTheory], and it is very important to me to be a good reader). At the same time, extrinsic motivation prefers external drives that push individuals to read (e.g., I am happy when someone recognizes my reading, and Grades are a good way to see how well I am doing in reading). Finally, the social motivation for reading refers to socialization with others (e.g., I often find uninteresting reading materials turn out to be interesting as many people like them and keep talking and discussing them). The number of items of the MERQ was nearly the same as that of the MRQ, with 50 items, which were then tested using EFA.

We used a fixed number of factors in the EFA process because we were confident in the theoretical foundation when adapting the MRQ. We assumed that eight factors would be extracted from the modified questionnaire. Subsequently, eliminating six items after the EFA process increased the instruments' suitability for assessing students' motivation for extensive reading. Given that five of the omitted

items were derived from the subscales measuring social reasons for reading, which were supposed to complement the scale for motivation goal, we can deduce that the social motivation of reading was relatively less reliant on face-to-face interaction (Appendix). Two of the remaining four SRFR items elicited the use of social media among students to read and express what they had recently read in public (e.g., I find it easy to read and post comments on certain issues posted on Instagram, Twitter, or Facebook and Social media increases my reading motivation through a reading challenge from my friends). In addition, three of the deleted items that did not load to the subscales revealed several pieces of information. First, helping friends with schoolwork in reading (I like to help my friends with their schoolwork in reading) was not a social reason for university students to read. In other words, they read extensively beyond the obligatory homework. Next, I talk to friends about what they are currently reading, as if I talk to my friends about what I am reading that appears already represented by social media. Lastly, the item My friends and I like to trade things to read sounded extraneous because the availability of a wide range of online reading materials has provided the students with abundant and accessible reading materials.

The CFA process confirmed the final factor of the proposed questionnaire. The remaining 44 items after EFA loaded significantly between 0.65 and 0.85 in the CFA. Importantly, this calculation did not influence the structure of the questionnaire. However, we checked the model fit indices to determine the questionnaire's overall fitness and individual factors. Although the outputs of the analysis indicated that the questionnaire fit the model well as a whole, RMSEA results of the individual factor check revealed that five factors were outside the fit model, namely, Reading Efficacy (0.09), Reading Challenge (0.07), Reading Curiosity (0.08), Importance of Reading (0.12), and Recognition for Reading (0.11). Given that a badness-of-fit score of 0.06 is considered within the close fit range (Hair et al., 2019) and a score of 0.10 is considered negligible (Shi, Lee and Maydeu-Olivares, 2019), we deemed that Reading Efficacy, Reading Challenge, Reading Curiosity, Importance of Reading, and Recognition for Reading required additional consideration. However, RMSEA tended to decrease with the addition of the indicators of the observed variables (Shi, Lee, and Maydeu-Olivares, 2019); we theoretically exhausted the possibilities of adding indicators in the quest to obtain a perfect model. Thus, we based our absolute fitness model on the overall RMSEA result of the questionnaire, which fit perfectly. Additionally, the CFI and TLI results for individual factors and whole factors were within acceptable ranges of fit at > 0.90. Thus, we infer that our hypothesized model was fit.

The validity check of the questionnaire indicated that items within the same subscales were built on the respective directed latent variables. At the same time, items of different subscales could be distinguished from one another. This fact supports our additional items to the original MRQ and indicates that the current measurement of the motivation of university students for extensive reading in EFL must consider the technological aspect of motivation (Takase, 2007; Pal and Vanijja, 2020; Rafique et al., 2020) and contextualize the ER principles to the items in the questionnaire (Day, 2015). The final structure of the proposed questionnaire was in line with that of the Takase model for reading motivation in the second language, which included online technology, such as the Internet, to reveal the reading motivation of university students. Simultaneously, the final structure is also in line with the questionnaire developed by (Park, 2015), which focused more on Korean EFL students' intrinsic and extrinsic motivation for reading. Following this validation is relatively interesting for the current study in exploring whether students' extrinsic motivation is related to their use of online reading strategies. In addition, despite our modification to the original MRQ, we continued to retain the expectancy-value aspects (Shang, Moss and Chen, 2023) in the form of subjective task value (importance of reading), which may be perhaps represented more by expectancy values as in the questionnaire of (Mori, 2002), which used nearly all components of expectancy-value aspects, intrinsic value, attainment value, extrinsic value, and importance value. The MERQ also confirmed the MORQ and the ARMM using the original MRQ scales in developing the instrument. However, the MERQ differs from both questionnaires in terms of its ability to transfer psychological theories about motivation to the context of EFL reading.

In conclusion, the MERQ was validated to determine the fittest measurement of students' reading motivation after the extensive online reading intervention in the EFL context. In doing so, we reduced the original subscales of the MRQ without altering the remaining items. Moreover, we added several items based on TAM and extensive reading theories but remained attached to the remaining eight original subscales of the MRQ. Specifically, we aimed to contextualize the MRQ with extensive online reading context at the university level. However, the MERQ has its limitations, which are as follows: First, some MERQ parameters must be reassessed due to low RMSEA. Future subscale additions can fix this problem. Second, study samples were limited to third-year college students with considerable reading intervention experience. We may have improved the questionnaire's generalizability if we had more replies from different fields and semesters. Future studies should address this issue. Third, the validation was not followed by investigating gender, age, English competence, and economic and social status disparities in reading motivation. Future research should uncover these discrepancies. Fourth, future research needs to recruit more respondents. University students are adult learners; therefore, involving diverse jobs of the same age range will raise the chance of getting more replies and improve the fitness of questionnaires measuring motivation for extensive reading in Indonesia. Future studies can increase TAM transfer to questionnaire items.

CONCLUSION

The study demonstrated that the subscales of the MRQ, in conjunction with TAM and extensive reading theories, can be used to assess the motivation of students to read following extensive online reading programs. Thus, this study opened possible avenues for future instructors of extensive reading

to use the items in the proposed questionnaire to establish the positive characteristics of motivated students with respect to EFL reading. MERQ is distinguishable from other questionnaires on extensive reading due to its ability to elicit information about students' motivation for reading via online interfaces. Finally, but certainly not least, the questionnaire may provide teachers or instructors with direct feedback regarding their students' motivation for EFL reading.

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APPENDIX

EXPLORATORY FACTOR ANALYSIS OF THE MOTIVATION FOR EXTENSIVE READING QUESTIONNAIRE

No.	Code	Items	Loading	Factor
1	RCU4	I read to learn new information about topics that interest me.	0.84	Reading Curiosity
2	RCU7	I read about my hobbies to learn more about them.	0.82	
3	RCU6	I find it easier to read about information I want to know on Google.	0.81	
4	RCU5	I like to read about new things.	0.82	
5	RCU1	If the teacher discusses something interesting, I might read more about it.	0.79	
6	RCU2	I have favourite subjects that I like to read about.	0.77	
7	RCU8	I cannot stop reading a series until I reach its end.	0.76	
8	RCU10	I enjoy reading a series.	0.72	
9	RCU3	I enjoy reading books about people in different countries.	0.69	
10	RCU9	I always choose the reading materials by myself.	0.65	
11	RI7	I find it easier to manage my reading by using online virtual library (Xreading, ER-Central, ReadTheory, etc.).	0.82	Reading Involvement
12	RI1	I enjoy a long, involved story or fiction book.	0.79	
13	RI4	I like mysteries.	0.79	
14	RI9	Reading graded readers in online virtual library (Xreading, ER-Central, ReadTheory, etc.) increases my reading rate.	0.78	
15	RI2	I make pictures in my mind when I read.	0.75	
16	RI3	I read stories about fantasy and make believe.	0.69	
17	RI8	I like to read various topics and genres.	0.69	
18	RI5	I read a lot of adventure stories.	0.67	
19	RC3	I like it when the questions in books make me think.	0.75	Reading Challenge
20	RC5	I like hard, challenging books.	0.75	
21	RC2	If a book is interesting, I don't care how hard it is to read.	0.73	
22	RC1	I usually learn difficult things by reading.	0.72	
23	RC4	If the project is interesting, I can read difficult material.	0.70	
24	RC6	I always want to read reading materials which are slightly above my reading level.	0.60	
25	RFR1	I am happy when someone recognizes my reading.	0.77	Reading for Recognition
26	RFR4	I like to get compliments for my reading.	0.74	
27	RFR3	My friends sometimes tell me I am a good reader.	0.74	
28	RFR2	I like having the teacher say I read well.	0.74	
29	RFR5	I always wait for my teacher to report our reading progress.	0.70	
30	SRFR9	I often find that uninteresting reading materials turn out to be interesting because many people like them and keep talking and discussing them.	0.71	Social Reasons for Reading
31	SRFR8	I find it easy to read and post comments on certain issues posted in Instagram, Twitter, or Facebook.	0.65	
32	SRFR6	I like to tell my family about what I am reading.	0.65	
33	SRFR7	Social media increases my reading motivation through reading challenge from my friends.	0.59	
34	IOR1	It is very important to me to be a good reader.	0.80	Importance of Reading
35	IOR2	Compared to other activities, it is very important to me to be a good reader.	0.76	
36	IOR3	I don't mind getting bad reading scores as long as I love reading.	0.77	
37	IOR4	I feel something is missing from my life if I do not read any time in a day.	0.73	
38	RFG2	Grades are a good way to see how well I am doing in reading.	0.81	Reading for Grade
39	RFG3	I look forward to finding out my reading grade.	0.82	
40	RFG1	I read to improve my grades.	0.78	
41	RE1	I know that I will do well in reading next year.	0.78	Self-Efficacy
42	RE3	I learn more from reading than most students in the class.	0.72	
43	RE2	I am a good reader.	0.73	
44	RE4	I can read any reading materials.	0.62	