

Motivational Factors Influencing the Use of Massive Open Online Courses (MOOCS) for Continuing Professional Development: A Systematic Literature Evaluation

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Abstract:

Since the term Massive Open Online Courses (MOOCs) was first coined in 2008, it has been dubbed as the disruptive technology in higher education. MOOCs have attracted massive number of users as the provider of open education to unlimited number of participants. As we embrace the impacts from the rapid transformations in the fourth industrial revolution, there has been a greater need to prepare the workforce to face the challenges that come with the change and one way is to see education as a development tool. While online learning is not new, MOOCs are undeniably making quality education accessible even to working adult learners who are looking for the opportunities of upskilling and reskilling their work talent. There is little research on MOOCs as supporting tools for Continuing Professional Development (CPD) in corporate settings, with researches mainly focusing on the learners from higher learning institutions. Therefore, this paper aims to analyze the literature on the motivational factors that influence the use of MOOCs for CPD. Findings show that the relevant literature is limited. The papers included in the review were classified into motivational factors from employers and employees' perspectives. Both categories identified professional development as one of the key factors influencing the use of MOOCs within the organizations.

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1. INTRODUCTION

The emergence of MOOCs has great impact on the education field, particularly in the distance education field (Nordin et al., 2016). Although online education has been around for decades, the focus was mainly to offer online courses to small and limited audience. What makes MOOCs different from traditional online education is the availability

and scalability which make MOOCs revolutionary (Hollands, 2014). The number of learners participating in online courses are massive – scaling up to thousands of students per course. MOOCs offer opportunities for acquiring new professional knowledge and skills for diverse learners of different background and age group. MOOCs give the possibilities to these learners to learn without

being confined within the learning institutions' boundaries of learning approaches, aims and pedagogical context (Grover et al.,2013). The flexibility of MOOCs makes it perfect in facilitating workplace learning among adult learners. The most prominent advantage of MOOCs is that they make high quality education accessible to massive number of learners without time and geographical restrictions (Shapiro et al., 2017).

However, there has been limited studies focusing on the systematic literature review offactors that motivate the use of MOOCs for CPD focusing on corporate settings. This paper aims to present a comprehensive and systematic review of the literature related to the topic in the current studies and identify research directions that can be addressed in the future.

The paper is organised as follows: Section 2 contains the review methodology of the systematic literature review process followed by Section 3 which presents the analysis of information to answer research question. Section 4 illustrates the discussion and finally conclusion is presented in Section 5.

2. REVIEW METHODOLOGY

The strategy of review adopted in this study is based on the Systematic Literature Review (SLR) guidelines by Kitchenham (2007) and Okoli (2010). The review process consists of three stages: planning, executing, and reporting stage.

2.1 Planning Stage

The planning stage activities include identifying specific research context, defining review protocol and constructing research questions. The research question (RQ) is 'What are the motivational factors that

influence the use of MOOCs for CPD?' The research question was designed based on the MOOCs implementation in the corporate and organizational settings.

2.2 Executing Stage

In executing stage, the search strategy was performed. The following key terms and mixed terms were used to search for relevant papers: "MOOCs AND continuing professional development", "MOOCs AND corporate training", 'MOOCs AND workplace training', and "MOOCs AND adult learning".The papers were identified through searching four scholarly electronic databases including IEEE Explore, Scopus, Springer Link, and Elsevier's Science Direct. The data are extracted based on the title and abstract information.The review process considered papers published between January 2008 and December 2018. The reason of selecting year 2008 is because it was the year when the term MOOC or Massive Open Online Course was first coined. All publications must be written in English. Any papers which did not comply with the inclusion criteria will be excluded.

In order to be included in the review, each identified paper must focus on the motivational factors influencing the use of MOOCs from corporate perspectives such as the use of MOOCs for professional development or corporate training. However, due to the limited number of related papers, further criteria were specified to choose relevant paper for inclusion in this review which are as follows: the paper should focus either on (A) the motivational factors that influence the use of MOOCs by employers or employees or (B) motivational factors influencing the success of MOOCs in corporate settings, or (C) addressing the motivations for using MOOCs in corporate settings.

In the study selection process, the databases were searched using the identified key terms which returned a total of 165 related papers to be reviewed. The papers were then evaluated based on the abstract and their brief contents where duplicated and irrelevant papers were rejected. The selection process left only 64 relevant papers where filtering process was continued by applying quality assessment criteria as shown in Table 1. The purpose of the quality assessment was to make sure selected papers were complete and useful for data extraction. The four questions (Q1-Q4) are in Table 2 with each questions given three answer options: Yes = 1; Partially = 0.5; and No = 0.

Table 1: Quality Assessment Criteria

No.	Item	Answer
Q1	Is there a clear description of the aims and objectives of the investigation?	Yes/No/Partially
Q2	Is the paper explained the method of analysis pertinent and adequately?	Yes/No/Partially
Q3	Is the paper supported with primary data?	Yes/No/Partially
Q4	Is the proposed study clearly described?	Yes/No/Partially

Once the quality assessment was performed based on the given criteria, the final papers were selected as shown in Table 2. Fourteen papers were very good and four papers were good. None of the papers were rated as fair and poor in quality.

Table 2: Quality Assessment Results

Quality Scale	Very Poor (<1)	Poor (1 - <2)	Good (2 - <3)	Very Good (3-4)	Total
# of papers	0	0	4	14	18
Percentage	0	0	22	78	100

2.3 Reporting Stage

The selected papers were further assessed with respect to the formulated of research questions in the planning stage. Data related to the RQ are reported in the Findings section.

3. FINDINGS

The results of the analysis showed that a total of eighteen papers were related to the topic. Out of the eighteen papers, six papers were recently published in 2018 and five in 2017. In the past two years, there has been a significant increase in the studies on MOOCs from corporate and organizational perspectives. Figure 2 shows the publication years of the papers.

The relevant papers can be categorized into two:

- i. Motivational factors that influence use of MOOCs from employers' perspectives
- ii. Motivational factors that influence use of MOOCs from employees' perspectives

The categorization of the selected papers is shown in Table 3. In the first category, five papers were identified focusing on studies of studies on employers' perspectives of MOOCs usage within the organizations while the remaining thirteen relevant papers from the second category were mainly studies on motivations for employees to use MOOCs.

Table 3: Classification of the Identified Papers

Category	Author(s) (Year)
Employers' perspectives	Hamori (2017); Park et al. (2018a); Olsson (2016); Radford et al. (2014); Park et al. (2018b)
Employees' perspectives	Loizzo et al. (2017); Pickering and Swinnerton (2017); Kaveri et

	al. (2015); Soyemi et al. (2018); Castaño-Muñoz et al. (2017); Egloffstein and Ifenthaler (2017); Brooker et al. (2018); Wambugu (2018); Koukis and Jimoyiannis (2018); Littlejohn et al. (2016); Milligan and Littlejohn (2014); Wang et al. (2017)
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From the review exercises, five factors were identified as the motivations for employers to use MOOCs in the organizations. Motivational factors for employees were classified into three categories: Personal-motivations, Social-motivations, and Professional-motivations.

Employer motivations

The motivations are:

- **Human Resource Development (HRD) support tool:** training and development of employees are one of the main motivations that influence MOOCs usage in organizations (Park et al., 2018).
- **Time and cost saving:** organizations could save time and money on providing in house trainings that require specific allocation of time, space and manpower. Microsoft for example has been using MOOCs to train salesforce in a minimum amount of time (Fourrage, 2015). MOOC-based training can reduce training time and fit employee's time better.
- **Recruiting and Hiring:** employers are positive about using MOOCs for recruiting and hiring purposes (Radford et al., 2014).
- **Customer Relationship Management:** employers could use MOOCs to build strong relationship with customers and provide customers with knowledge related to the organization's products or services (Park et al., 2018).

- **Course relevance:** employers are more receptive to using MOOCs within the organizations if the chosen courses are relevant to the current job content (Hamori, 2017)

Employee motivations

- **Personal-motivations:** including general interest, perceived enjoyment, self-satisfaction, self-evaluation, lifelong learning, perceived usefulness, perceived ease of use.
- **Social motivations:** including social connections, perceived sense of belongings.
- **Professional motivations:** including professional development, current job improvement, certification, employment status, employer support.

Table 4 illustrates the factors identified as the motivations that influence the use of MOOCs by employers and employees from the relevant papers.

Table 4: Motivations that Influence the Use of MOOCs

Category	Motivational Factors	Author(s) (Year)
Employer	HRD Support Tool	Park et al. (2018a); Radford et al. (2014)
	Time and Cost Saving	Park et al. (2018b)
	Recruiting and Hiring	Radford et al. (2014); Olsson (2016)
	Customer Relationship Management	Park et al. (2018a)
	Course Relevance	Hamori (2017)
	General Interest	Brooker et al. (2018)
	Perceived Enjoyment	Loizzo et al. (2017)

Employee	Self-satisfaction	Littlejohn et al. (2016)
	Self-evaluation	Littlejohn et al. (2016)
	Lifelong Learning	Soyemi et al. (2018)
	Social connections	Loizzo et al. (2017)
	Perceived Sense of Belongings	Koukis and Jimoyiannis (2018)
	Perceived Usefulness	Wang et al. (2017)
	Perceived Ease of Use	Wang et al. (2017)
	Professional Development	Loizzo et al. (2017); Pickering and Swinerton (2017); Kaveri et al. (2015); Soyemi et al. (2018); Castaño-Muñoz et al. (2017); Egloffstein and Ifenthaler (2017); Brooker et al. (2018); Wambugu (2018); Koukis and Jimoyiannis (2018); Littlejohn et al. (2016); Milligan and Littlejohn (2014); Wang et al. (2017)
	Certification	Egloffstein and Ifenthaler (2017)
	Employment Status	Castaño-Muñoz et al. (2017)
Employer Support	Castaño-Muñoz et al. (2017)	

4. DISCUSSION

One interesting finding from the analysis of the eighteen relevant papers is the limited amount of research on motivation factors influencing MOOCs use within corporate and organizational context. However, the analysis shows an increase in the research for the past years. Another

interesting finding was that fourteen out of the eighteen papers used survey as a method for data collection which is 77.8% of the papers.

The finding of this study also shows that the identified factors that influence MOOCs use among employers were HRD support tool, time and cost saving, recruiting and hiring, customer relationship management, and course relevance. Big organizations such as Google, Microsoft, Mc Afee and Loreal have been using MOOCs to train and develop the skills of their employees (Chapple, 2013); Badia, 2015; Meister, 2013; Fourrage, 2015). Organizations could use MOOCs to help existing employees in upskilling and reskilling. Replacing corporate trainings with MOOCs-based training can reduce cost and time. The flexibility of MOOCs offered the convenience for the employees to do their courses at the time of their convenience, without being limited to physical locations. Employers also saw the opportunity of hiring and recruitment on MOOCs to find potential employees who are self-motivated and constantly building themselves professionally. Employers found that MOOCs could benefit them in filling the gaps for demands of employees of specific skills. Corporations such as Bank of America used MOOCs to provide customers and prospective customers with financial literacy lessons (Bersin, 2013) while Rabobank from the Netherlands adopted MOOCs to assist their customers and building strong relationships with the customers (Willemssen, 2018b). The last factor that influence employers motivations to use MOOCs was the course relevance. Employers are more likely to invest in MOOC-based trainings if the courses are relevant to current job content of the employees. Employers who invested big amount of money in the training and development of their employees are more

likely to be more receptive to using MOOCs in their organisations Hamori (2017).

Finding on motivational factors for employees to use MOOCs were classified into three: Personal-motivations, Social-motivations and Professional-motivations. The factors identified were general interest, perceived enjoyment, self-satisfaction, self-evaluation, lifelong learning, social connections, perceived sense of belongings, perceived usefulness, perceived ease of use, professional development, current job improvement, certification, employment status, employer support. Based on a survey report by Coursera, participants enrolled in MOOCs because of the career benefits such as improving their current job or finding a new job (Zhenghao et al., 2015). The benefits can be tangible or intangible. Tangible benefits include increase in salary, looking for new job opportunities, or even embarking in a new business venture. Upskilling where participants want to improve their current job skills or reskilling to increase their chances of landing a new job by acquiring new skills are intangible career benefits.

Although the reviews identified many factors that influence factors that lead to the usage of MOOCs in corporate settings, there is still a lot of areas of research that can be explored in determining other factors that drive MOOCs usage in organizations. For instance, further study can be done to investigate use of MOOCs in different professional domains from different geographic regions. This can consider variables such as language and culture of different countries although the domains are the same, or even the organizations are the same. Davis et al. (2014) found that the motivations of learners to use MOOCs vary across cultures. No studies have examined the influencing factors that motivate the use of

MOOCs by employees of the same organization but from different geographic region. In general, more studies are needed to have a greater understanding of MOOCs acceptance in corporate settings.

5. CONCLUSIONS

Over the years, there has been significant increase in the research interest to study MOOCs from corporate perspectives. Based on the review conducted, eighteen relevant papers were reviewed and analysed. The papers were categorised into employers and employees' perspectives and proposed motivational factors that influence the use of MOOCs from both perspectives were identified. There are five motivational factors from employers' perspectives; HRD Support Tool, Time and Cost Saving, Recruiting and Hiring, Customer Relationship Management, and Course Relevance. Fourteen motivational factors from employees' perspectives which were classified into three categories: Self-motivations, Social motivations, and Professional motivations were identified namely General Interest, Perceived Enjoyment, Self-satisfaction, Self-evaluation, Lifelong Learning, Social connections, Perceived Sense of Belongings, Competitions, Ease of Use, Professional Development, Certification, Employment Status and Employer Support.

The limitations in this study are the fact that only papers written in English focusing on the use of MOOCs in organizational settings were reviewed and analysed. Future studies could extend the investigation of MOOCs usage on various professional domains. Further studies could also examine models and frameworks within the context of MOOCs for CPD. Finally, further study could validate the technology acceptance and

theories for using MOOCs in corporate settings and organizations.

6. REFERENCES

- [1] Badia, X.O. 2015, "MOOCs for employees training as an upcoming eLearning trend", available at: <https://elearningindustry.com/moocs-for-employees-training-upcoming-elearning-trend>
- [2] Bersin, J. 2013, "The MOOC marketplace takes off", available at: www.forbes.com/sites/joshbersin/2013/11/30/the-mooc-marketplace-takes-ff/#4d4c24be58a8
- [3] Brooker, A., Corrin, L., De Barba, P., Lodge, J. and Kennedy, G., 2018. A tale of two MOOCs: How student motivation and participation predict learning outcomes in different MOOCs. *Australasian Journal of Educational Technology*, 34(1).
- [4] Castaño-Muñoz, J., Kreijns, K., Kalz, M. and Punie, Y., 2017. Does digital competence and occupational setting influence MOOC participation? Evidence from a cross-course survey. *Journal of Computing in Higher Education*, 29(1):28-46.
- [5] Chapple, C. 2013, "Google offers HTML5 dev course on Udacity", available at: www.telekom.com/en/company/human-resources/content/magenta-mooc-361206
- [6] Egloffstein, M. and Ifenthaler, D., 2017. Employee perspectives on MOOCs for workplace learning. *TechTrends*, 61(1), pp.65-70.
- [7] Fourrage, L. 2015, "Cracking the successful corporate MOOC", available at: <https://trainingmag.com/trgmag-article/cracking-successful-corporate-mooc>
- [8] Grover, Shuchi, et al. "The MOOC as distributed intelligence: Dimensions of a framework & evaluation of MOOCs." *International Society of the Learning Sciences*, 2013.
- [9] Hamori, M., 2017, May. The drivers of employer support for professional skill development in MOOCs. In *European Conference on Massive Open Online Courses*: 203-209.
- [10] Hollands, F. M. 2014. MOOCs: Expectations and Reality.
- [11] Kaveri, A., Gunasekar, S., Gupta, D. and Pratap, M., 2015, October. Decoding the Indian MOOC learner. In *2015 IEEE 3rd International Conference on MOOCs, Innovation and Technology in Education (MITE)*: 182-187
- [12] Kitchenham, B. and Charters, S., 2007. Guidelines for performing systematic literature reviews in software engineering.
- [13] Koukis, N. and Jimoyiannis, A., 2018. MOOCs and Teacher Professional Development: A Case Study on Teachers' Views and Perceptions. *International Association for Development of the Information Society*.
- [14] Littlejohn, A., Hood, N., Milligan, C. and Mustain, P., 2016. Learning in MOOCs: Motivations and self-regulated learning in MOOCs. *The Internet and Higher Education*, 29:40-48.
- [15] Loizzo, J., Ertmer, P.A., Watson, W.R. and Watson, S.L., 2017. Adult MOOC Learners as Self-Directed: Perceptions of Motivation, Success, and Completion. *Online Learning*, 21(2), p.n2.
- [16] Meister, J. (2013), "How MOOCs will revolutionize corporate learning and development", available at: www.forbes.com/sites/jeannemeister/2013/08/13/how-moocs-will-revolutionize-corporate-learning-development/#6a6f0c611255
- [17] Milligan, C. and Littlejohn, A., 2014. Supporting professional learning in a massive open online course. *The International Review of Research in Open and Distributed Learning*, 15(5).

- [18] Milligan, C. and Littlejohn, A., 2017. Why study on a MOOC? The motives of students and professionals. *The International Review of Research in Open and Distributed Learning*, 18(2).
- [19] Nordin, N., Norman, H., & Embi, M. A. 2016. Technology Acceptance of Massive Open Online Courses in Malaysia. *Malaysian Journal of Distance Education*: 1-16.
- [20] Okoli, C. and Schabram, K., 2010. A guide to conducting a systematic literature review of information systems research.
- [21] Olsson, U., 2016. Open courses and MOOCs as professional development—is the openness a hindrance?. *Education+ Training*, 58(2):229-243.
- [22] Park, S., Jeong, S. and Ju, B., 2018a. Employee learning and development in virtual HRD: focusing on MOOCs in the workplace. *Industrial and Commercial Training*, 50(5): 261-271.
- [23] Park, S., Jeong, S. and Ju, B., 2018b. MOOCs in the workplace: an intervention for strategic human resource development. *Human Resource Development International*, pp.1-12.
- [24] Pickering, J.D. and Swinnerton, B.J., 2017. An anatomy massive open online course as a continuing professional development tool for healthcare professionals. *Medical Science Educator*, 27(2): 243-252.
- [25] Radford, A.W., Robles, J., Cataylo, S., Horn, L., Thornton, J. and Whitfield, K.E., 2014. The employer potential of MOOCs: A mixed-methods study of human resource professionals' thinking on MOOCs. *The International Review of Research in Open and Distributed Learning*, 15(5).
- [26] Shapiro, Heather B., et al. 2017 "Understanding the massive open online course (MOOC) student experience: An examination of attitudes, motivations, and barriers." *Computers & Education* 110: 35-50.
- [27] Soyemi, O., Ojo, A. and Abolarin, M., 2018. Digital Literacy Skills and MOOC Participation among Lecturers in a Private University in Nigeria. *Library Philosophy and Practice*: 1-18.
- [28] Wambugu, P.W., 2018. Massive Open Online Courses (MOOCs) for Professional Teacher and Teacher Educator Development: A Case of TESSA MOOC in Kenya. *Universal Journal of Educational Research*, 6(6):1153-1157.
- [29] Wang, S., Dong, P.H. and Shao, S., 2017. Research on Influencing Factors of Employees' Acceptance of MOOC Training. In *Management Information and Optoelectronic Engineering: Proceedings of the 2016 International Conference on Management, Information and Communication (ICMIC2016) and the 2016 International Conference on Optics and Electronics Engineering (ICOEE2016)*: 197-203.
- [30] Willemsen, W. 2018. "Rabobank inspires customers with online masterclass international business", available at: <https://gitp.nl/business-cases/raboban> (accessed February 15, 2019)
- [31] Zhenghao C, Alcorn B, Christensen G, Eriksson N, Koller D, Emanuel E. Who's benefiting from MOOCs, and why. *Harvard Business Review*. 2015 Sep 22;25:44.