

# How Affect Autonomous and Controlled Motivation using Massive Open Online Course?

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# How Affect Autonomous and Controlled Motivation using Massive Open Online Course?

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**Abstract**—This Higher Education is currently facing various challenges since the Covid-19 pandemic, especially for teaching and learning activities using online learning. Massive Open Online Course (MOOC), one of the newest forms of innovation used as an online learning tool. MOOC are the most recent stage in the development of open educational resources. The inflexibility or standardization of lectures will definitely reduce the enthusiasm of students to participate in MOOC. MOOCs are part of a growing trend in higher education, but motivation from students is dwindling. This study uses the ACM (Autonomous and Controlled Motivation) model which aims to measure how much influence autonomous motivation has on students' intention to use the MOOC application, and how much influence controlled motivation has on students' intention to use the MOOC application as an online learning. Respondents in this study were higher education students who used the MOOC application. The statistical test of the ACM model was carried out using smart-PLS software to test the proposed hypothesis. The result showed that autonomous and control motivation were significant determinants of perceived behavior control.

**Keywords**—autonomous motivation, controlled motivation, MOOC.

## I. INTRODUCTION

Many prospective learners are no longer able to attend practical higher education institutions during Covid-19 pandemic. Today, many post-secondary students cannot go to campus to study the entire course to earn a degree. Massive Open Online Course (MOOC), one of the newest forms of innovation used as an online learning tool, this lecture represents the latest stage of the evolution of open educational resources [1]. These courses are accessible via the internet and are usually open for registration with no requirements or limits on student numbers. This is very supportive of the implementation of the Independent Learning Campus Independent curriculum which is one of the implementations of education in the era of the industrial revolution 4.0.

Some observers believe that MOOC provides an opportunity for everyone who is struggling for the opportunity to receive a good quality higher education from a Top-ranked university in developed countries, and that this

course can provide autonomy for students. Other observers are also anxious that MOOC providers may not be able to offer a wide range of courses at the same time in content that accommodates the diversity of learning objectives and motivations, different levels of prior knowledge or available resources [2].

The inflexibility or standardization of lectures will definitely reduce the enthusiasm of students to participate in MOOC. As researched by [3], MOOC represents a positive trend in higher education, but student motivation is diminishing.

Autonomous motivation is also referred to as intrinsic motivation where activities are carried out by individuals on the basis of pleasure and sincerity, while controlled motivation, which is often referred to as extrinsic motivation, is an activity carried out by individuals due to pressure from outsiders [4].

This study aims to examine the Autonomous Motivation (AM), Controlled Motivation (CM), Perceived Behavior Control (PBC), and Behavior Intention (BI) of students using the MOOC application as an online learning, especially during the Covid-19 pandemic. With this research, in terms of the urgency of the research, it is expected to be able to correct the shortcomings contained in the application of the MOOC application in terms of intrinsic and extrinsic student motivation. So that online learning using MOOC can be used continuously or long term.

## II. METHODS

### A. Participants

One hundred and thirty seven higher education students participated in Indonesia. 50.36% of whom were males, whose age ranged from 19 to 24 with a mean of 21.50. All participants had heard about MOOCs and had taken at least one MOOC in Indonesia before. Students varied in terms of ethnicity background, which include Javanese, Arabian, Madura, among others.

### B. Procedure

Participants completed online survey in the academic year during homeroom. Surveys were conducted during the

academic year of 2020/2021. Distribution of the questionnaire were sent out using google form.

### C. Measure

As in previous research, autonomous motivation was calculated as the mean of intrinsic, and controlled motivation was calculated as the mean of external and introjected regulation [5].

To measure autonomous motivation and controlled motivation, we used the academic regulation scale of [6]. All items were provided likert scale ranging from 1 (Totally not agree) to 5 (Totally Agree). Eighteen items were presented including four constructs: six items for autonomous motivation and four items for controlled motivation [6], three items for perceived behavioral control [7], and five items for behavioral intention were adapted from Unified Theory of Acceptance and Use of Technology [8]. The construct and the description measurement are shows in Table 1.

TABLE I. CONSTRUCTS AND DESCRIPTION

	Construct	Description
Independent Variables	Autonomous Motivation	Engaging in habits that emanates from the self and is thought to be consistent with intrinsic goals or ends
	Controlled Motivation	Engaging in habits for reasons that are externally referenced, such as gaining rewards or perceived approval from others, or avoiding punishment or guilt
Mediating Variable	Perceived Behavior Control	Total control in practising MOOC, up to you to practice, confident can improve quality, up to you to improve the quality of MOOC
Dependent Variable	Behavior Intention	An indication of a person's willingness to engage in a given behavior.

### D. Research Model and hypotheses

Figure 1 illustrates the model that will be validated as extracted from using SmartPLS to analyze the data. Here the relationship between the independent variables to the dependent variables through the mediator. According to [9], "data analyzed by SmartPLS has two step, mainly the assesment of the measurement model and structural model."

The hypotheses to be tested are:

- H1.** Autonomous motivation positively influences perceived behavioral control.
- H2.** Controlled motivation positively influences perceived behavioral control
- H3.** Perceived behavioral control positively influences behavioral intention

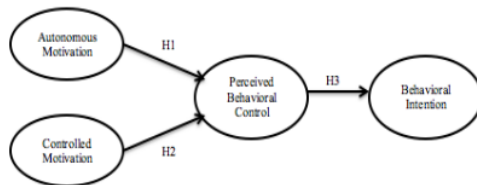


Fig. 1. Research Model

## III. RESULTS AND DISCUSSION

### A. Assesment of Measurement Model

The measurement model is examined by looking at the relationship between the latent variable in the model before assessing the hypotheses and relationship. The model significance may be established based on numerous research that have been examined by analyzing indicator reliability, assessment of convergent validity, and assessment of discriminant validity of the model. [10].

### B. Indicator Reliability

The factor loading values are used to assess indicator reliability [10]. Based on [11], factor loadings that were above the threshold of 0.6 were significant. The final model after showing that factor loading is considered satisfactory for all items, for further analysis is shown in Figure 2.

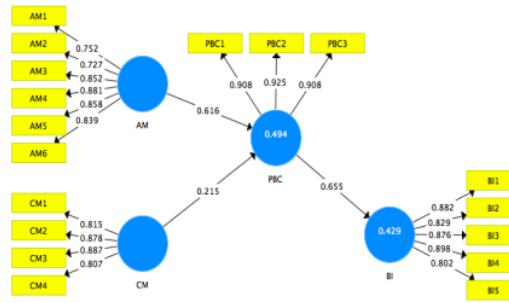


Fig. 2. Measurement Model

### C. Assessment of Convergent Validity

Convergent Validity is the degree to which one measure of a concept correlates favorably with other measures of that factor [12]. Convergent validity is established where the average variance (AVE) values for every item are over 0.5, and the composite reliability (CR) values are above 0.7 suggesting greater levels of reliability [13]. These values are illustrated in Table 2.

TABLE II. FACTOR LOADINGS, AVE, CR AND CRONBACH'S ALPHA

	Composite Reliability	Item Loading	AVE	Cronbach's Alpha
<b>Autonomous Motivation</b>	0.925		0.673	0.902
AM1		0.752		
AM2		0.727		
AM3		0.852		
AM4		0.881		
AM5		0.858		
AM6		0.839		
<b>Controlled Motivation</b>	0.910		0.718	0.868
CM1		0.815		
CM2		0.878		
CM3		0.887		
CM4		0.807		
<b>Perceived Behavior Control</b>	0.938		0.835	0.901
PBC1		0.908		
PBC2		0.925		
PBC3		0.908		

	Composite Reliability	Item Loading	AVE	Cronbach's Alpha
<b>Behavioral Intention</b>	0.933		0.737	0.910
BI1		0.882		
BI2		0.829		
BI3		0.876		
BI4		0.898		
BI5		0.802		

#### D. Assessment of Discriminant Validity

Discriminant validity in this context means that construct should have average variance (AVE) values higher than the highest squared correlation of the construct with others in the same framework. In this study, [14] criterion was used in which a construct had to contribute to more variation among its assigned indicators than any other of construct [15]. Table 3 indicated that endogenous construct to be satisfactory when values higher than the highest squared correlation of the construct with others in the same framework.

TABLE III. DISCRIMINANT VALIDITY USING FORNELL-LARCKER CRITERION

	AM	BI	CM	PBC
<b>AM</b>	<b>0.820</b>			
<b>BI</b>	0.721	<b>0.858</b>		
<b>CM</b>	0.260	0.414	<b>0.847</b>	
<b>PBC</b>	0.672	0.655	0.375	<b>0.914</b>

#### E. Structural Model Evaluation

The structural model with the relevant path coefficients and standard errors, are shown in figure 3 structure model. The significance of the values for a 95% confidence level is outlined in table 4. This model is also used to describe the

importance of the hypothesized relationship between autonomous motivation, controlled motivation, perceived behavior control, and behavior intention.

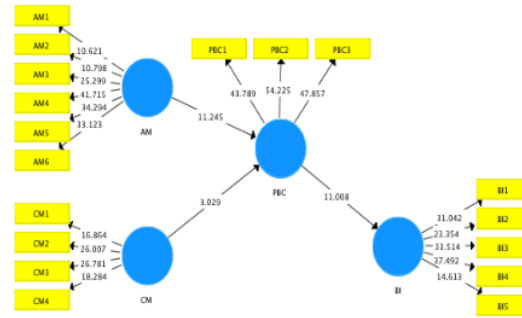


Fig. 3. Structure Model

Table 4, show the mean deviation, t-statistic and p-value for path coefficient and standard error of the path for the structural model using the PLS-algorithm and bootstrapping process in SmartPLS 3.0 for the relationship between autonomous motivation, controlled motivation, perceived behavior control and behavior intention. According to [11], the t-statistic of the path coefficients compared were calculated. T-statistic for all relationship of constructs was significant with value is above 1.96. P-value for all relationship of constructs was significant ( $< 0.05$ ). From hypotheses 1, 2 that autonomous motivation and controlled motivation positively influences perceived behavioral control has a significant supported. [16] said that autonomous motivation and controlled motivation given attitudes linked to approach-oriented method to achieving that performance, and intention to engage in the long term.

TABLE IV. PATH COEFFICIENT RELATIONSHIP AND STANDARD ERROR

Hypothesis	Relationship	Original Sample (O)	Sample Mean (M)	Standar Deviation (STDEV)	T-Statistic	P-Values	Desicion
H1	Autonomous Motivation $\rightarrow$ Perceived Behavioral Control	0.616	0.617	0.055	11.245	0.000	Supported
H2	Controlled Motivation $\rightarrow$ Perceived Behavioral Control	0.215	0.216	0.071	3.029	0.003	Supported
H3	Perceived Behavioral Control $\rightarrow$ Behavioral Intention	0.655	0.660	0.059	11.000	0.000	Supported

#### IV. CONCLUSION

This study demonstrates that students' autonomy has a significant factor in deciding their willingness to participate in MOOCs. As a result, the designer of MOOC should continue to emphasize a learner-centered approach that encourage learners' autonomous and controlled personalization of MOOC system.

The contribution of this study are for the body of knowledge and to the practice. Practice can help institutions initiate MOOC-based online education, as well as improve student participation and engagement.

Despite the autonomous and controlled environment of massive open online courses, the study reveals that facilitation and supervision are still required during MOOC learning to ensure good learner intention. When creating an effective online learning environment in MOOC design, institutions should take all of these characteristics factors, and the programs offer can be both effective and motivating the learners.

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