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The Role of Motivation in Online Professional Learning Strategies

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Abstract

The importance of online learning has been highlighted by higher education, and online program administrators have looked for management strategies to establish competitive advantages through student satisfaction and loyalty. This research investigated the roles of various learning motivations (i.e., autonomous motivation, external motivation, need achievement, goal setting, social comparison, and reinforcement), perceived value, and satisfaction to predict students' loyalty toward an online program in the MBA context. Data were collected from online panel members of Qualtrics who were currently enrolled in online MBA programs in the United States. The empirical findings identify that perceived value was significantly influenced by external motivation, need achievement, goal setting, and reinforcement. MBA program satisfaction was positively affected by need achievement and reinforcement, and loyalty toward an MBA program was significantly influenced by perceived value and MBA program satisfaction. Overall, these results indicate the relative importance of each learning motivation for predicting online students' loyalty.

Keywords: e-learning, motivation, online program, MBA, loyalty

Categorizations: Education, Quantitative, Business Education

Introduction

Online learning has been increasingly popular in higher education by providing students with university degree programs, professional certificate programs, and webinar series in the last decade. Both practitioners and scholars have attempted to formulate management strategies for online learning programs in higher education as the number of students who register for these programs has dramatically increased (i.e., 2,974,836 enrolled exclusively online in 2016 vs. 3,104,879 in 2017 and 3,325,750 enrolled in some online courses in 2016 vs. 3,352,581 in 2017) (Inside Higher ED, 2018). For example, using descriptive analysis, the *2019 Online Education Trends Report* explores online students' goals, learning expectations, experiences, and reasons for selecting online learning options instead of on-campus programs (i.e., the program reputation, current situations, employer partnership, etc.).

In addition to industry reports, empirical academic research has been conducted to explore the role of student motivation in online learning programs. For instance, based on motivation theories, Lin, Zhang, and Zhang (2017) investigated the impacts of intrinsic and extrinsic motivations on satisfaction,

perceived progress, and final grades among students attending virtual schools. Chen and Jang (2010) emphasized self-determination theory when they also explored the influences of extrinsic, intrinsic, identified, and introjected motivations on course satisfaction, perceived learning, engagement, and achievement. Prior studies have employed different theoretical frameworks for online students' learning motivation and have predicted similar outcomes, although they have, interestingly, indicated inconsistent results, depending on the dimensionality of the learning motivation construct (e.g., no significant relationship between motivation and satisfaction vs. direct or indirect association between motivation and satisfaction) (see Chen & Jang, 2010; Hanus & Fox, 2015; Lin et al., 2017; Yilmaz, 2017).

The differences enable scholars to formulate the following question: What theoretical background and dimensions of learning motivation are the best theory and triggers of favorable outcomes in the online learning setting (e.g., high levels of perceived value, satisfaction, and loyalty toward the online program)? For example, does self-determination theory that focuses on intrinsic (i.e., needs based) and extrinsic aspects (i.e., rewards based) explain online students' learning motivation the same as those of traditional students? Needs-based and rewards-based motivations have been primarily studied by prior research to explain and predict online students' performance and outcomes (Barak, Watted, & Haick, 2016; Zhou, 2016), but it is also important to consider the characteristics of the online learning environment, such as social-based motivation (i.e., social comparison), to formulate the most appropriate model that predicts the students' perceived value, satisfaction, and loyalty toward an online program (Rogers, 2017). More specifically, although the online learning platform does not provide students with face-to-face interpersonal interactions, it functions as a unique setting for unlimited socialization for students via virtual cooperation, discussion, chatting, competition, and video calls with other classmates to successfully complete their projects and courses (Yanson & Johnson, 2016). Online programs have also used social networking platforms for marketing purposes and as a virtual place to build a social connection between former students and current/future students under a more natural setting.

In addition to the aforementioned theories in the education field, prior research in the context of classroom and traditional learning has documented well developed motivation-based theories to predict student performance, satisfaction, and behavioral intention, such as expectancy-value (Wigfield & Eccles, 2000) and reinforcement (Coetzer, 2007). Little research to date, however, has investigated integration of theoretical frameworks for an online professional program (e.g., graduate degree and certificate) to predict favorable outcomes from a broader perspective on online students' learning motivation.

This study fills the academic gap by focusing on a wide range of motivational factors (i.e., based on self-determination, need achievement, goal setting, social comparison, and Skinner's reinforcement theories) that influence perceived value, satisfaction, and loyalty among online MBA students (Atkinson & Litwin, 1960; Bandura, 1977; Deci & Ryan, 2008; Festinger, 1954; Locke, Shaw, Saari, & Latham, 1981; Skinner, 1957; Vansteenkiste, Lens, De Witte, & Feather, 2005). The empirical result will address which motivation is the most influential predictor of favorable outcomes for online professional learning management. The existing literature on online students' motivation framework will be extended with the integration of socially based motivation and an examination of which motivation is a better driver of perceived value and satisfaction, respectively, which in turn establish loyalty among online students. This study formulates managerial implications for online professional programs in addition to its theoretical implication.

Theoretical Background

Self-Determination Theory

The fundamental notion of self-determination theory is that individuals have inherent tendencies toward optimal development and continuous growth that make them active (Deci & Ryan, 2000). The inherent tendencies are divided into intrinsic and extrinsic motivations. First, intrinsic motivation plays a role in individuals' psychological function for continuous growth. For example, students with a high level

of intrinsic motivation are more likely to engage in learning-related activities for the sake of the learning experience without consideration of other consequences (Clements & Kamau, 2018). Students pursuing optimal development are also involved in how to take extrinsic motivations (or external benefits) from a class by adapting to its learning environment (Deci & Ryan, 2000). Self-determination theory assumes that both intrinsic and extrinsic motivations are based on individuals' psychological needs for relatedness (i.e., a sense of belonging with other students and/or feeling of connection with other students), competence (i.e., belief in how well the learning environment supports students in producing their desired outcomes), and autonomy (i.e., a sense of ownership of students' behavior) (Deci & Ryan, 2008).

Self-determination theory focuses more on the process of autonomy support than the other two needs do because those needs are primarily associated with the social aspect (Clements & Kamau, 2018). More specifically, autonomy support emphasizes students, such as their sense of self-initiation, being allowed to have freedom and choice to engage in various learning-related activities. When students are satisfied with autonomy support, their intrinsic motivation for learning increases (Richter, Raban, & Rafaeli, 2015). Conversely, extrinsic motivation in education is based on tangible incentives, such as higher levels of salary, degree, or social achievements (e.g., occupation). However, depending on their intrinsic needs, each student tends to consider different incentives as rewarding (Deci, Vallerand, Pelletier, & Ryan, 1991).

Need Achievement Theory

Need achievement theory assumes that individuals with a high level of achievement are more likely to desire success by exhibiting high ability while performing a task (Nicholls, 1984). Hence, achieving success can serve as a motivational factor for learning among students. For example, students with high achievement motivation tend to prefer tasks of intermediate or high difficulty to gain an opportunity to use and enhance their ability (Richter et al., 2015). In particular, the online learning environment provides students with clear status indicators and achievement systems that enable them to monitor their performance. For example, compared to traditional classes, online classes should be well--structured for the first week of each semester by providing achievement systems that indicate each goal of all modules. The need for achievement enables students to concentrate on learning and achieve the learning goals properly (Sitanggang, Luthan, & Dwiyanto, 2020). Online students can also quickly and visibly check their progression more easily and frequently than traditional students. The progress checking approach serves as an indicator that directs students to achieve their learning goals (Moneta, 2011). Furthermore, the time and place flexibility of online classes can extend students' study time by offering various ways to consume the course content and achieve each module's objectives. This characteristic of online learning environments makes students strive hard to succeed in each course.

Goal Setting Theory

A goal is the aim or object of an action and refers to what individuals attempt to accomplish (Locke et al., 1981). According to the goal setting theory, individuals tend to be motivated to achieve more by difficult, immediate, context appropriate, and specific goals than by long-term goals (Richter et al., 2015). The assumption is based on the notion that short-term goals enable individuals to focus their effort on things requiring present, direct attention and to increase their persistence and belief in completing an ongoing task (Locke et al., 1981). Hence, goal setting leads students to improve their academic performance when (1) their goals are sufficiently challenging and specific rather than general; (2) they can see their progress with respect to the goal via feedback; and (3) they believe that they have sufficient ability to achieve the goals (i.e., self-efficacy) (Bandura & Locke, 2003; Locke et al., 1981; Richter et al., 2015). For example, a high level of that belief leads students to set more ambitious goals and enhance their academic performance in class (Clements & Kamau, 2018). This is because students with more ambitious goals set themselves the most challenging tasks to perform better in class than others do (Elliot,

McGregor, & Gable, 1999). The goal commitment to learning is a motivational factor that enables students to develop appropriate skills and/or strategies and increase persistence to complete the challenging tasks and achieve the goals by emphasizing success seeking (Clements & Kamau, 2018).

Social Comparison Theory

Social comparison theory assumes that individuals tend to accumulate knowledge about themselves by continuously comparing themselves with others (Festinger, 1954). In addition to knowledge about themselves, individuals keep evaluating and comparing their reactions, abilities, and beliefs to those of similar others because they want to check and improve their ability (Lillienfeld, Lynn, Namy, & Woolf, 2009). They wish, consequently, to gain a better position than that of similar others. Thus, this type of student tends to be more competitive and interested in the learning environment than other students through an upward comparison (Richter et al., 2015). The upward comparison means that students compare themselves with others who are better they are. The upward comparison triggers the students' self-improvement motivation to increase their self-evaluation of competence and their belief in getting a better position than others in class (Wolff, Helm, & Möller, 2018; Wood, 1989).

The online environment particularly displays other students' progress and academic performance through discussion forums and class averages. The online system environment allows students to recognize whether they achieve a higher score or the highest score in each assignment or course by comparing their score to other students' work and the class average. Students can also monitor others' academic performance so they can evaluate whether their current academic performance is worse or better than the others and determine what they should do to improve their competition in class. This learning environment leads to friendly competition among people and makes them take on the challenging tasks to perform better than others (Medler & Magerko, 2011; Wolff et al., 2018).

Reinforcement Theory

The reinforcement theory proposed by Skinner (1957) considers reinforcement as an outcome that strengthens the probability of a response. Hence, individuals tend to be motivated to take an action depending on whether the outcome is positive or negative. Accordingly, the fundamental notion of the theory is that reinforcement triggers individuals to continuously establish a desirable behavior in a positive or negative manner. For example, when reinforcement is gone, individuals' desired behavior tends to gradually weaken and eventually be extinguished (Richter et al., 2015). In other words, if there is a positive correlation between individuals' behaviors and their consequences, those individuals are more likely to be motivated to behave to get the results. However, they are less likely to behave and may even cease action when their behavior leads to negative or neutral outcomes (Scott, 2018). Reinforcement particularly serves as a motivational factor for students in learning environments, because learning provides them with psychological rewards and incentives (e.g., development of personal skills and self-improvement).

Perceived Value, Satisfaction, and Loyalty

Perceived value has been considered as a core antecedent of behavioral outcomes, such as satisfaction and loyalty (Prebensen & Xie, 2017). Perceived value is defined as all of the quantitative and qualitative objective and subjective factors that comprise consumers' complete consumption experience (Zeithaml, 1988). Consumers categorize the factors into benefits and costs to evaluate whether product or service-benefits (e.g., quality, such as utilitarian functions) are greater than their costs (e.g., consumers' time and effort for consumption of the product/service as well as its price) based on their perception (Kim & Thapa, 2018). In this study, students gain benefits from taking online courses, completing assignments, interacting with instructors, developing skills, and receiving a professional degree at reasonable prices and

in a reasonable time. Students who pursue a higher degree also receive its high status and feel affiliated with a reputable institution as a consequence of enrolling in the program.

From the long-term perspective, satisfaction has an important role in generating loyalty, positive word-of-mouth, and sustainable profitability for service organizations (e.g., education service in this study) (Prebensen & Xie, 2017). Satisfaction is a unidimensional construct that tends to be formed as a consequence of customers' aggregate judgement of all transactions and interactions with a product/service (Kim & Thapa, 2018). Based on this notion, this study defines satisfaction as a unidimensional concept that reflects students' overall impressions with an MBA program regarding its education services (Sun, Tsai, Finger, Chen, & Yeh, 2008).

Customer loyalty results in sustainable competitive advantages for any product/service and organization (Kim & Thapa, 2018; Prebensen & Xie, 2017). For example, a high level of loyalty toward a particular brand or product/service leads to customers' greater willingness to recommend the brand or product/service and a positive word-of-mouth intention as well as continuous usage intention and supportive behavior (Prebensen & Xie, 2017). Hence, this study conceptualizes loyalty by focusing on the likelihood that students will recommend their online MBA program to others and keep supporting the program after graduation through donations and mentorship.

Hypotheses Development

The main purpose of this research is to fill the academic gap in the online program (or eLearning) management literature by exploring the roles of various motivation factors in predicting students' perceived value, program satisfaction, and loyalty toward the program. This study applies each motivation theory to the online MBA program context by applying self-determination theory (Deci & Ryan, 2000), need achievement theory (Nicholls, 1984), goal setting theory (Locke et al., 1981), social comparison theory (Festinger, 1954), and reinforcement theory (Skinner, 1957) to explain which motivational factor is the most influential to favorable outcomes for online professional programs. This study considers perceived value and MBA program satisfaction as mediators in the paths from motivational factors to loyalty toward MBA programs based on the stimulus-organism-response (S-O-R) theory. The fundamental notion of the S-O-R theory is that a stimulus triggers the development of an organism's internal evaluation procedure, which leads to a response (Konuk, 2019). This study found that online professional program attributes, such as courses, assignments, instructors, and learning systems as stimuli, may affect internal evaluations of students (i.e., perceived value and program satisfaction in this study), which consequently increase their loyalty level toward the program (Tsiotsou,
2006). Students may evaluate a program as valuable and perceive it as satisfactory based on its attributes (Konuk, 2019). Therefore, this research provides meaningful insights for online program administrators and e-learning scholars as well as instructors who have been involved in online professional program development. This study establishes and tests the following research hypotheses:

H1: Autonomous motivation is positively associated with perceived value (H1a) and MBA program satisfaction (H1b). External motivation is positively associated with perceived value (H1c) and MBA program satisfaction (H1d).

H2: Need achievement is positively associated with perceived value (H2a) and MBA program satisfaction (H2b).

H3: Goal setting is positively associated with perceived value (H3a) and MBA program satisfaction (H3b).

H4: Social comparison is positively associated with perceived value (H4a) and MBA program satisfaction (H4b).

H5: Reinforcement is positively associated with perceived value (H5a) and MBA program satisfaction (H5b).

H6: Perceived value is positively associated with MBA program satisfaction (H6a) and loyalty toward MBA program (H6b).
H7: MBA program satisfaction is positively associated with loyalty toward MBA program.

Methodology

Sampling and Data Collection

This study worked with Qualtrics (a web-based survey company) to recruit students who are enrolled in online MBA programs in the United States. Qualtrics' online panel samples help scholars to increase generalizability or external validity and to collect geographically/culturally diverse samples in the United States (Baek & Yoo, 2018). First, a survey link was sent to active Qualtrics panel members who were currently enrolled in a 100% online MBA program. The first data collection was completed with 215 panel members. The study's authors carefully reviewed each respondent's institution to confirm they offered a 100% online MBA program before finalizing the dataset. Thirty samples were consequently removed through this data purification process. The second data collection was conducted, and this study finally collected and used 210 samples for data analyses. Among the participants, 133 were female (63.3%); 49.1% were in their thirties and forties followed by twenties (9.5%); 34.8% of the sample worked in the machinery and equipment business followed by agribusiness (21.4%), chemicals, energy, or environmental technology (11.9%); 24.8% of the participants worked in their respective industries for around two years; and 13.3% had worked for around one year.

Measures

This study adapted survey items from previous studies to measure all constructs of the research model (see Table 1). A 7-point Likert-type scale was employed to measure all items from "1 = strongly disagree" to "7 = strongly agree." The authors selected the measurements based on how well they had been theoretically developed and rigorously tested in prior studies. The survey items were finalized after several revisions. This study also employed a procedural remedy to control common method variance (e.g., response biases such as response formats, scale types, or social desirability) by randomly ordering some of the survey items in the finalized questionnaire (Bagozzi & Yi, 1990).

Results

Measurement Model

The authors followed Anderson and Gerbing's (1992) two-step approach to test the reliability and validity of all measures before proceeding with a path analysis. First, Cronbach's alpha coefficients were assessed by SPSS 26.0 to check the reliability of all measures. As indicated in Table 1, Cronbach's alpha coefficients of all measures employed in this research were more than 0.70 that is generally acceptable in the social science field (Nunnally, 1978). Second, confirmatory factor analysis (CFA) was performed by AMOS 26.0 to assess the validity of all measures (Anderson & Gerbing, 1992). During this stage, two items were dropped to maintain the convergent and discriminant validity of each construct.
As a result, the critical ratios of all measures were statistically significant (i.e., greater than 2.58, $p <$ 0.01), signifying the convergent validity.

Table 1

Measurement model from CFA

Constructs and Variables	Standardized loading	Critical ratio
Autonomous motivation (α = 0.798) from Graves, Sarkis & Zhu (2013)		
I have engaged in this MBA program because it allows me to achieve goals I consider important.	0.727	Fixed
I have engaged in this MBA program because it fits with my personal values.	0.727	9.930
I have engaged in this MBA program because it is personally important to me.	0.762	10.402
I have engaged in this MBA program because of the pleasure I get from it.	0.639	8.736
External motivation (α = 0.759) from Graves et al. (2013)		
I have engaged in this MBA program because it is required for my career path.	0.889	Fixed
I have engaged in this MBA program because I was awarded for doing it.	0.420	4.800
I am in this MBA program because I was paid to do it. *	-	-

Table 1 (continued)

Measurement model from CFA

Constructs and Variables	Standardized loading	Critical ratio
Need achievement (α = 0.822) from Elliot & Murayama (2008)		
My aim is to completely master the materials presented in this MBA program.	0.670	Fixed
I am striving to understand the content of this MBA program as thoroughly as possible.	0.720	9.197
My goal is to learn as much as possible.	0.765	9.686
My aim is to perform well relative to other students.	0.731	9.318
I am striving to do well compared to other students.	0.587	7.678
My goal is to perform better than other students. *	-	-
Goal setting (α = 0.744) from Miller, Behrens, & Greene (1993)		
It was easy for me to establish learning goals for this MBA program.	0.579	Fixed
In studying for quizzes/tests, I was able to establish clear goals for my study time.	0.769	8.090
As I progressed through this MBA program, I had a clear idea of what I was trying to accomplish.	0.750	7.978
Social comparison (α = 0.767) from Gibbons & Buunk (1999)		
I often compare myself with others with respect to what I have accomplished in life.	0.561	Fixed
I often like to talk with others about mutual opinions and experiences.	0.714	7.907
If I want to learn more about something, I try to find out what others think about it.	0.676	7.637
Reinforcement (α = 0.834) from Coetzer (2007)		
I am in this MBA program to gain opportunities to learn different tasks.	0.703	Fixed
I am in this MBA program to gain opportunities to complete challenging tasks.	0.751	10.424
I am in this MBA program to gain opportunities to learn new skills.	0.768	10.652
I am in this MBA program to gain opportunities to improve myself.	0.769	10.668
Perceived value (α = 0.766) from Lee, Yoon, & Lee (2007) Overall, enrolling this MBA program is valuable and worth.	0.666	Fixed

The value I received by enrolling in this MBA program was more than I expected.	0.700	8.667
I obtained good results from enrolling this MBA program.	0.800	9.612
MBA program satisfaction (α = 0.796) from Kim & Thapa (2018)		
I am satisfied with what I have learned in this MBA program.	0.696	Fixed
I am satisfied with my personal development in this MBA program.	0.787	10.219
Overall, I am satisfied with this MBA program.	0.778	10.123
Loyalty toward MBA program (α = 0.835) from Tsao & Coll (2004)		
I will use trending words such as hashtags for this MBA program while using social media.	0.511	Fixed
I will recommend this MBA program to others.	0.750	7.058
I will encourage other people to enroll in this MBA program.	0.739	7.009
I am interested in subscribing to a university newsletter after graduation.	0.626	6.422
I am interested in sharing experiences with future MBA students after graduation.	0.699	6.821
After graduation, I am interested in donating money to support students.	0.597	6.249
I am interested in being an e-mail mentor for a future MBA student after graduation.	0.538	5.859

χ^2 = 1056.679, d.f. = 491 (χ^2/d.f. = 2.152), p < 0.001, IFI = 0.855, TLI = 0.831, CFI = 0.852, RMSEA = 0.074

* Items were deleted during the confirmatory factor analysis.

This study performed multiple CFAs with each pair of primary measures to test the discriminant validity of all measures, following the approach of Rust, Moorman, and Dickson (2002). The chi-square and degree of freedom values of each unconstrained model were compared with those of each constrained model (i.e., set as the constructs are same). This statistical approach signifies discriminant validity between two constructs when the difference in the degree of freedom values between two models is 1 and the difference in the chi-square values between two models is more than 3.84 (p < 0.05). Table 2 accordingly demonstrated that all constructs used for this research had discriminant validity.

Table 2

Chi-square difference test for discriminant validity of the measures

	Constrained		Unconstrained			
	χ^2	*df*	χ^2	*df*	$\triangle\chi^2$	p^*
Autonomous motivation vs. External motivation	26.641	9	22.518	8	4.123	0.042
Autonomous motivation vs. Need achievement	57.489	27	48.232	26	9.257	0.002
Autonomous motivation vs. Goal setting	31.948	14	19.186	13	12.762	0.000
Autonomous motivation vs. Social comparison	20.519	14	14.477	13	6.042	0.014
Autonomous motivation vs. Reinforcement	55.141	20	42.277	19	12.864	0.000
Autonomous motivation vs. Perceived value	48.270	14	34.179	13	14.091	0.000
Autonomous motivation vs. MBA program satisfaction	32.834	14	18.675	13	14.159	0.000
Autonomous motivation vs. Loyalty toward MBA program	165.983	44	155.431	43	10.552	0.000
External motivation vs. Need achievement	24.742	14	18.293	13	6.449	0.011
External motivation vs. Goal setting	20.734	5	10.207	4	10.527	0.001
External motivation vs. Social comparison	7.233	5	2.374	4	4.859	0.028
External motivation vs. Reinforcement	26.829	9	19.603	8	7.226	0.007

External motivation vs. Perceived value	22.525	5	15.985	4	6.540	0.011
External motivation vs. MBA program satisfaction	10.156	5	1.613	4	8.543	0.003
External motivation vs. Loyalty toward MBA program	139.012	27	133.061	26	5.951	0.015
Need achievement vs. Goal setting	46.401	20	29.733	19	16.668	0.000
Need achievement vs. Social comparison	44.851	20	37.689	19	7.162	0.007
Need achievement vs. Reinforcement	64.938	27	58.276	26	6.662	0.010
Need achievement vs. Perceived value	63.091	20	49.605	19	13.486	0.000
Need achievement vs. MBA program satisfaction	57.206	20	45.679	19	11.527	0.001
Need achievement vs. Loyalty toward MBA program	181.192	54	166.487	53	14.705	0.000
Goal setting vs. Social comparison	18.939	9	12.686	8	6.253	0.012
Goal setting vs. Reinforcement	62.576	14	52.001	13	10.575	0.001
Goal setting vs. Perceived value	29.327	9	13.611	8	15.716	0.000
Goal setting vs. MBA program satisfaction	24.931	9	8.698	8	16.233	0.000
Goal setting vs. Loyalty toward MBA program	140.504	35	128.838	34	11.666	0.001
Social comparison vs. Reinforcement	33.551	14	28.910	13	4.641	0.031
Social comparison vs. Perceived value	16.240	9	5.903	8	10.337	0.001
Social comparison vs. MBA program satisfaction	23.444	9	15.122	8	8.322	0.004
Social comparison vs. Loyalty toward MBA program	129.301	35	121.468	34	7.833	0.005
Reinforcement vs. Perceived value	52.278	14	43.108	13	9.170	0.002
Reinforcement vs. MBA program satisfaction	59.839	14	48.637	13	11.202	0.001
Reinforcement vs. Loyalty toward MBA program	175.521	44	165.119	43	10.402	0.001
Perceived value vs. MBA program satisfaction	29.184	9	19.479	8	9.705	0.002
Perceived value vs. Loyalty toward MBA program	163.613	35	148.732	34	14.881	0.000
MBA program satisfaction vs. Loyalty toward MBA program	169.208	35	157.243	34	11.965	0.001

Finally, this study conducted Harman's one-factor test as a statistical remedy, in addition to the procedural remedy, to empirically check whether common method variance was a serious issue (Podsakoff & Organ, 1986). It can be concluded that common method variance is a serious threat in a study if the chi-square and degree of freedom values of a single factor measurement model are better than those of a multidimensional model. The empirical finding indicated (1) chi-square = 1,056.679 with df = 491 (the measurement model) and (2) chi-square = 1,351.446 with df = 527 (the one-factor model). Based on the finding, this study concluded that common method variance was successfully controlled.

Testing of the Research Hypotheses

The authors calculated the means of all measures for each construct to perform a path analysis via AMOS 26.0 after confirming the reliability and validities of all measures. The fit indices of the research model are indicated under Table 3. Figure 1 also illustrates maximum likelihood estimates (MLE) for the proposed model's parameters.

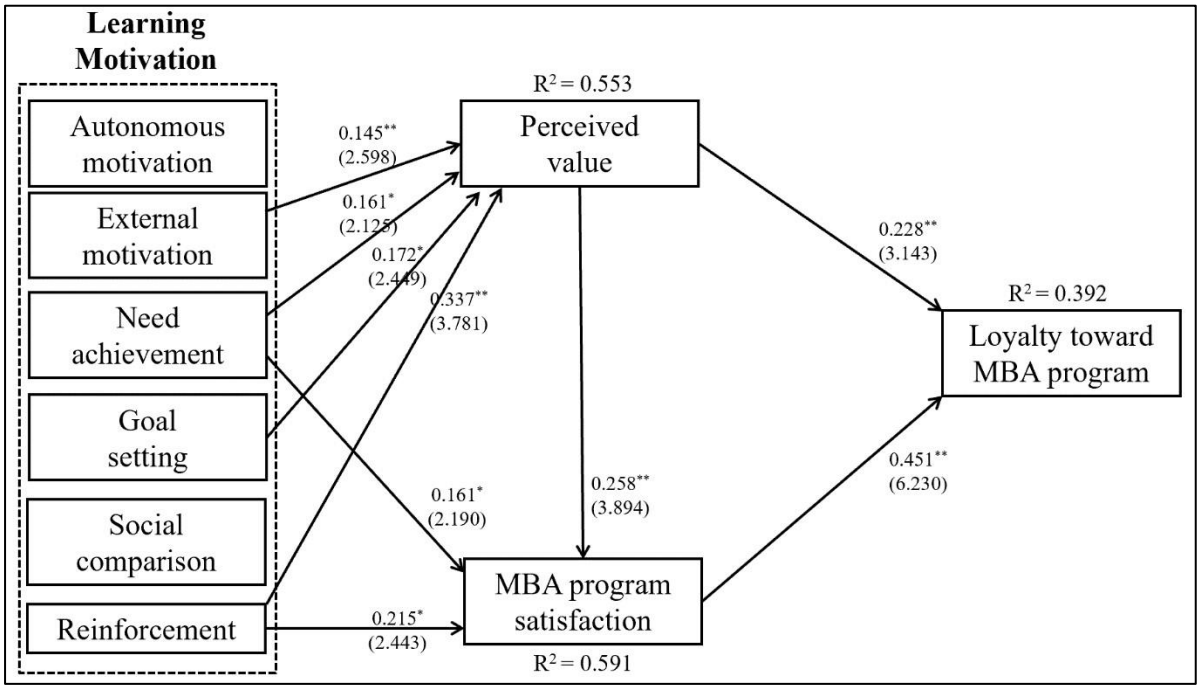

Figure 1. *Estimates of path analysis*
$^{**}p < 0.01$, $^{*}p < 0.05$. Note: Only significant paths are demonstrated.

H1a and H1b indicated online MBA students' autonomous motivation would positively affect perceived value and MBA program satisfaction. However, its impacts on perceived value (coefficient = 0.074, critical ratio = 1.001, $p > 0.05$) and MBA program satisfaction (coefficient = 0.054, critical ratio = 0.766, $p > 0.05$) were not statistically significant, not supporting H1a and H1b. H1c and H1d also addressed whether online MBA students' external motivation would positively influence perceived value and MBA program satisfaction. External motivation's influence on perceived value was statistically significant (coefficient = 0.145, critical ratio = 2.598, $p < 0.01$) but not on MBA program satisfaction (coefficient = 0.022, critical ratio = 0.404, $p > 0.05$), supporting H1c only. H2a and H2b speculated that online MBA students' need achievement would positively affect perceived value and MBA program satisfaction. Need achievement's influences on perceived value (coefficient = 0.161, critical ratio = 2.125, $p < 0.05$) and MBA program satisfaction (coefficient = 0.161, critical ratio = 2.190, $p < 0.05$) were statistically significant, supporting H2a and H2b.

H3a and H3b proposed positive associations between online MBA students' goal setting and perceived value/MBA program satisfaction. The impact on perceived value (coefficient = 0.172, critical ratio = 2.449, $p < 0.05$) was statistically significant but not on MBA program satisfaction (coefficient = 0.099, critical ratio = 1.461, $p > 0.05$), supporting H3a only. Additionally, H4a and H4b indicated online MBA students' social comparison would positively affect perceived value and MBA program satisfaction. However, the influences on perceived value (coefficient = 0.001, critical ratio = 0.014, $p > 0.05$) and MBA program satisfaction (coefficient = 0.094, critical ratio = 1.274, $p > 0.05$) were not statistically significant. However, H6a and H6b regarding the positive associations between online MBA students' reinforcement and perceived value (coefficient = 0.337, critical ratio = 3.781, $p < 0.01$)/MBA program satisfaction (coefficient = 0.215, critical ratio = 2.443, $p < 0.05$) were supported. Lastly, H6 and H7 addressed the positive relationships among online MBA students' perceived value, MBA program satisfaction, and loyalty towards an MBA program. Perceived value had significantly positive influences on MBA program satisfaction (coefficient = 0.258, critical ratio = 3.894, $p < 0.01$) and loyalty toward MBA program (coefficient = 0.228, critical ratio = 3.143, $p < 0.01$), supporting H6a and H6b. MBA program satisfaction

also had a significantly positive impact on loyalty towards an MBA program (coefficient = 0.451, critical ratio = 6.230, $p < 0.01$), supporting H7.

In addition to their direct impacts, this study tested the indirect impacts of online MBA students' motivations on loyalty toward their MBA program through perceived value and MBA program satisfaction. Based on the Monte Carlo and Bootstrap maximum likelihood approaches, the indirect effects were assessed within 95% of confidence level (Kim & Kim, 2020). Table 3 indicated that online MBA students' loyalty toward their MBA program was significantly influenced only by need achievement (indirect coefficient = 0.128, $p < 0.01$), goal setting (indirect coefficient = 0.104, $p < 0.05$), and reinforcement (indirect coefficient = 0.213, $p < 0.01$) through mediators, such as perceived value and MBA program satisfaction.

Table 3

Standardized parameter estimates

Path	Standardized estimates	Standardized error	Critical ratio
Autonomous motivation → Perceived value	0.074	0.080	1.001
Autonomous motivation → MBA program satisfaction	0.054	0.077	0.766
External motivation → Perceived value	0.145	0.051	2.598**
External motivation → MBA program satisfaction	0.022	0.050	0.404
Need achievement → Perceived value	0.161	0.082	2.125*
Need achievement → MBA program satisfaction	0.161	0.080	2.190*
Goal setting → Perceived value	0.172	0.070	2.449*
Goal setting → MBA program satisfaction	0.099	0.069	1.461
Social comparison → Perceived value	0.001	0.075	0.014
Social comparison → MBA program satisfaction	0.094	0.073	1.274
Reinforcement → Perceived value	0.337	0.087	3.781**
Reinforcement → MBA program satisfaction	0.215	0.087	2.443*
Perceived value → MBA program satisfaction	0.258	0.067	3.894**
Perceived value → Loyalty toward MBA program	0.228	0.072	3.143**
MBA program satisfaction → Loyalty toward MBA program	0.451	0.071	6.230**

Indirect effects	Standardized estimates	*p*-value
Autonomous motivation → Loyalty toward MBA program	0.050	0.216
External motivation → Loyalty toward MBA program	0.060	0.079
Need achievement → Loyalty toward MBA program	0.128	0.003**
Goal setting → Loyalty toward MBA program	0.104	0.011*
Social comparison → Loyalty toward MBA program	0.043	0.319
Reinforcement → Loyalty toward MBA program	0.213	0.001**

Endogenous variables	SMC (R^2)
Perceived value	0.553 (55.3%)
MBA program satisfaction	0.591 (59.1%)
Loyalty toward MBA program	0.392 (39.2%)

** $p < 0.01$, * $p < 0.05$

[a] χ^2 = 47.852, d.f. = 6 (χ^2/d.f. = 7.975), $p < 0.004$, IFI = 0.968, TLI = 0.800, CFI = 0.967, SRMR = 0.073

Discussion

Theoretical Implications

This research adapted various learning motivation theories and frameworks to explore the determinants of management outcomes for an online professional program, such as perceived value, MBA program satisfaction, and loyalty toward MBA program (Pham, Limbu, Bui, Nguyen, & Pham, 2019). First, this study contributes to the existing online learning literature by proposing an integrated model that predicts students' loyalty toward a professional program with an empirical emphasis on the broader perspectives on internal motivations. In the educational technology and online learning management literature, external or situational factors have been considered primarily to predict student satisfaction and loyalty, such as service quality, technical system quality, support system quality, and instructor quality (Al-Fraihat, Joy, Masa'deh, & Sinclair, 2020; Pham et al., 2019). However, the external or situational factors, from the psychological perspective, tend to be more unstable and more easily influenced by other factors than internal motivations among individuals (Deci & Ryan, 2008). Additionally, from the educational standpoint, students with higher levels of internal learning motivations are less likely to be influenced by external or situational factors by concentrating on achievement-relevant outcomes and processes that are self-determined by the students (Chen, Elliot, & Sheldon, 2019). Compared to other educational contexts, such as MBA programs in the professional online program context, this approach to students' internal motivations should be considered to predict their perceived value, satisfaction, and loyalty toward the program (Wilkins, He, Zhu, & Elmoshnib,2018). Therefore, this research proposes a new psychological framework for online professional programs, such as the MBA, by emphasizing a wide range of internal motivations including autonomous motivation, external motivation, need achievement, goal setting, social comparison, and reinforcement.

Second, as another theoretical contribution, this study explored which motivation is the most influential on online students' favorable outcomes for online learning program management. This research establishes an integrated model, embracing six dimensions of online learning motivation when compared to previous studies in the educational psychology and online learning literature focusing primarily on self-determination theory, goal setting, or reinforcement (Chen et al., 2019; Rogers, 2017; Yanson & Johnson, 2016). This research additionally considers online MBA students' perceptions of social aspects in the context of an online learning environment (i.e., social comparison), although the empirical finding indicates the impact was insignificant. The social aspects need to be considered by future scholars because social interaction is one of the main reasons for pursuing a professional degree (or motivations) (Rogers, 2017). However, more interestingly, the empirical result confirms that online students' reinforcement is the most influential factor that determines loyalty toward an MBA program as well as the factors of perceived value and MBA program satisfaction. Thus, scholars in the online professional education field and online learning management need to reflect reinforcement and social comparison in addition to self-determination theory when establishing a research model. This research proposes a new avenue for formulating an online professional program and learning management model with social- and individual-oriented motivations to predict students' favorable outcomes for the online program and institutions.

Practical Implications

The empirical findings of this study are that external motivation, need achievement, and goal setting serve as indicators for evaluating benefits among online MBA students. Online program administrators and instructors need to recognize, from a managerial perspective, that internal achievement-oriented learning (e.g., psychological achievement and improvement) leads students to believe an online program is more valuable and worthwhile, regardless of whether other students talk about the program (i.e., social comparison) and how important the program is to them (i.e., autonomous

motivation). Therefore, it is recommended that objectives, outcomes, expectations, and required prerequisite skills and knowledge are available to students. In the case of policies and expectations that are general to all courses in the program, an easily accessible resources area can be made available to students. This can be used to communicate estimated time commitment for courses, expectations for general prerequisite knowledge retained from undergraduate education, program policies, codes of conduct, technical requirements, etc. For objectives, outcomes, expectations and prerequisite skills specific to individual courses, instructors should communicate prerequisite skills, learning goals, anticipated outcomes, information about course resources, communication protocols, grading policies, and assessments in the course syllabus and within the course site of the learning management system.

Availability of this information allows the program to establish expectations and the students to create a plan for success in navigating the course. Additionally, this information is useful to the student for understanding the anticipated learning outcomes for individual courses. Furthermore, this allows students to assess the degree to which individual courses will not only provide a challenging learning environment but also determine the degree to which the course will provide opportunities to learn or reinforce skills. MBA students value course content that is related to the current business environment, such as courses, like the CPA, aligned with industry standards or credentials. Integration of ongoing topics, such as COVID-19, is perceived as challenging and relevant. Opportunities for peer-to-peer engagement, such as group projects or monitored discussion forums, can allow for active interactions. When students believe they are improved through the course and its content, they perceive the MBA program as valuable and worthwhile.

This study's empirical result reveals that the factors of need achievement and reinforcement lead to students' higher levels of MBA program satisfaction. Compared to other online learning contexts, MBA students are more likely to be satisfied with their MBA program when perceiving that they perform better than other classmates in each class. General online programs, such as online accelerated undergraduate degree programs, are generally pursued by students with similar educational backgrounds. However, online professional programs such as an MBA tend to be pursued by students from a wide range of educational backgrounds and work experiences. The online MBA students are also proud of their work experiences and previous degrees, so they are more likely to perform better than other classmates by using their own backgrounds when taking each course. Providing feedback that allows students to assess their performance relative to their peers, such a generalized, aggregated performance feedback on exams and other assessments, may allow students to feel a sense of accomplishment when their performance is relatively good. On the other hand, such aggregated feedback is also valuable to students who are performing below average. Additionally, course instructors may wish to provide students the opportunity to share their educational and work-related background via a "getting to know you" post that can be viewed by fellow classmates. This type of sharing may be valuable if students work in teams or participate in small group discussions. Opportunities to self-assess and gauge their own performance can be motivational to online MBA students. Online MBA students who perceive their program as valuable and are satisfied with it are more likely to be loyal toward their program via positive word-of-mouth, recommendations, donations, and mentorships even after graduation.

Limitations and Conclusions

This study suggests three directions for future research based on its limitations. First, although this study attempts to embrace a wide range of learning motivations when establishing a research model, one might argue that there are still unexplored motivational factors in the educational fields, such as the self-efficacy and expectancy-value constructs (Wigfield & Eccles, 2000). Thus, future studies in the online learning context should employ various approaches (e.g., focus group interview, systemic literature review, online review analysis) to identify potential dimensions of students' learning motivations. Second, this study considers perceived value, MBA program satisfaction, and loyalty toward MBA program as

favorable outcomes for online learning program management. However, future research needs to explore the mediating roles of other variables, such as online program identification, commitment, and trust, which have been studied in the online service management fields. This study also does not categorize the types of loyalty toward MBA programs as positive word-of-mouth, recommendation, donation, and mentorship. Future studies may look into new mediators and different types of students' loyalty behaviors to extend our research model. Finally, this study does not examine the impact of motivations on perceived value, satisfaction, and loyalty over time. Hence, future research may investigate the associations among the variables through the test-retest method (e.g., 1st year of the MBA program vs. 2nd year of the MBA program). That effort leads online learning program practitioners to formulate more feasible management strategies for each class.

This study has provided insight into motivational factors for students' enrollment in online MBA programs. This study demonstrates that students at a graduate level may have different goals and expectations of an online program compared to undergraduate online students. Furthermore, this study demonstrates that MBA students, enrolled in a professional graduate program, desire a high level of skill development and/or rigorous academic challenges that might be different from the expectations of students enrolled in undergraduate degree programs or other types of graduate degree programs.

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