

Firm-Level Efficiency in Customized Learning: An Applied Economic Analysis of Value Co-Creation

Zi Xing WANG

<https://orcid.org/0009-0003-8174-6655>

Faculty of Business and Communications

INTI International University, Nilai, Negeri Sembilan, Malaysia

Guilin Shanshui Vocational College, School of Digital Economy and Management, China

i24027546@student.newinti.edu.my

Chee Hoo WONG

<https://orcid.org/0000-0003-0691-4463>

Faculty of Business and Communications

INTI International University, Nilai, Negeri Sembilan, Malaysia

cheehoo.wong@newinti.edu.my

Yang LYU

<https://orcid.org/0009-0007-1073-4525>

Faculty of Business and Communications

INTI International University, Nilai, Negeri Sembilan, Malaysia

i24026537@student.newinti.edu.my

Guangy LI

<https://orcid.org/0009-0005-4351-5797>

Faculty of Business and Communications (FBC)

INTI International University, Nilai, Negeri Sembilan, Malaysia

i25029985@student.newinti.edu.my

Xiyuan LUO

<https://orcid.org/0000-0003-0691-4463>

Guilin Shanshui Vocational

College, School of Digital Economy and Management, China

LXY151015@outlook.com

Christian Wiradendi WOLOR

<https://orcid.org/0000-0003-1314-9966>

Faculty of Economics and Business, Universitas Negeri Jakarta, Indonesia

christianwiradendi@unj.ac.id

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Abstract

In the context of digital transformation, educational services are evolving towards personalization and customization. Customer engagement has become a crucial mechanism for customized course platforms to achieve value creation and user retention. This study constructs a "customer engagement-functional value/hedonic value-customer retention" model based on value co-creation theory and examines the moderating effect of unique requirements. Using 279 customized course user questionnaires as a sample, SPSS 27.0 and AMOS 26.0 were employed for empirical analysis.

The results show that customer engagement significantly and positively impacts customer retention; both hedonic and functional experiential values play a partial mediating role; and unique requirements positively moderate the relationship between engagement and experiential value. This study reveals the intrinsic mechanism by which customer engagement affects customer retention in the context of customized courses, expands the application of relevant theories in the field of education, and provides practical insights for platforms to optimize engagement mechanisms and improve retention. These findings contribute to the economics of education literature by demonstrating how firm-level adoption of customized learning services enhances resource allocation efficiency and market competitiveness of education providers in the digital economy.

Keywords: customized courses, customer engagement, experiential value, customer retention, economics of education, service sector efficiency.

JEL Classification: I21; L84; O33.

Introduction

The rise of digital technology and the increasing demand for personalization are accelerating the transformation of course design and delivery toward course-level customization models. From an applied economics perspective, this shift represents a fundamental restructuring of how educational firms allocate resources and capture value, with direct implications for firm-level productivity and the market competitiveness of education providers in an increasingly digital service landscape. Learners, through participation in customized course content and learning pathway design, are transforming from passive recipients to active value co-creators, significantly enhancing their perceived course experience and influencing subsequent behaviour (Dziewanowska and Kacprzak, 2023). However, existing research largely focuses on traditional service domains and general educational contexts, lacking a systematic exploration of how customer participation in customized course-based services influences customer retention through functional and hedonic course experiential value (Amjad and Azhar, 2023; Zhang et al., 2024). Furthermore, the boundary effects of course-related customer-specific needs in customized course settings have not been adequately examined.

Based on the value co-creation theory (Nguyen et al., 2021), this study constructs a course-level mechanism model to examine how customer engagement influences customer retention through functional and hedonic experiential value, and investigates the moderating effect of unique requirements. This study expands the applicability of this theory to the context of customized course-based services, providing empirical evidence for customized course platforms and providers to optimize engagement mechanisms, improve resource allocation efficiency, and enhance competitive positioning within the digital education market.

1. Literature Review

Value co-creation theory argues that value is not delivered solely by firms but is generated through interaction and resource integration between providers and customers (Vargo and Lusch, 2016).

In customized course service contexts, learners have shifted from passive recipients to active participants in the course creation and delivery process. By engaging with learning content and interacting online, students significantly enhance their perceived value and learning satisfaction, thereby strengthening their identification with the platform and their willingness to continue using it (Dziewanowska and Kacprzak, 2023).

Customized course services emphasize learners' active contribution of information and resources, co-creating value through participation in course content customization, learning pathway adjustment, and course feedback cycles during service use (Soleymani et al., 2025). This study is based on value co-creation theory, emphasizing that learners actively contribute information and resources within customized courses, rather than simply consuming pre-designed course content.

Customer engagement is a core mechanism for value co-creation in customized course services, significantly influencing course co-creation, satisfaction, and retention. Students' participation in online learning through discussions, feedback, and interaction can enhance their course experience and satisfaction (Dewarani and Alversia, 2023). Evidence from online course settings further highlights the importance of participant interaction and feedback in shaping the learning experience (Wayne et al., 2024). In this study, customer engagement is operationalized through information provision related to learning needs and co-creation behaviors, reflecting continuous interaction and resource contribution throughout the customized course lifecycle (Zhang et al., 2023).

Customer experience value in customized courses encompasses two dimensions: functional value and hedonic value. Functional value relates to the effectiveness, efficiency, and performance of services, manifesting as learning efficiency and a sense of goal achievement, with significantly improved learner engagement leading to better learning outcomes and continued use (Dziewanowska and Kacprzak, 2023; Singh et al., 2025). Hedonic value emphasizes pleasure and immersion, reflected in emotional engagement and social enjoyment, with positive interaction enhancing platform attachment (Soleymani et al., 2025).

Customer retention reflects the quality of long-term learner-provider relationships in customized course contexts. Value co-creation improves retention rates by enhancing experience and satisfaction (Dewarani and Alversia, 2023), reflecting their recognition of the value of customized courses. Unique needs moderate the relationship between participation behaviour and value perception (Yin et al., 2025); such that learners with higher unique needs are more likely to gain added-value experiences from customized course co-creation.

1.5 Hypothetical Development

The concept of customer engagement is approached from complementary behavioral and resource-investment perspectives. In service co-creation, engagement reflects the extent to which customers contribute information, effort, and collaborative behaviors to the service process (Sadighha et al., 2024; Xu et al., 2024). Customer satisfaction has a significant impact on customer retention (Payne et al., 2008), while active customer involvement can positively influence satisfaction (Souza et al., 2023). Therefore, based on the above relationships, the following hypothesis is proposed:

H1: Customer engagement has a significant positive impact on customer retention;

This study selects information provision and co-creation as dimensions of customer engagement. During service co-creation, companies exchange information with customers, jointly address problems, and provide better services and benefits, thereby increasing functional value. At the same time, active engagement can enhance customers' sense of control over the development process and increase hedonic value. Therefore, this study proposes the following hypotheses:

H2a: Customer engagement has a significant positive impact on hedonic value;

H2b: Customer engagement has a significant positive impact on functional value;

Customer experience is an important factor in customer retention across service contexts (Nwankwo & Kanyangale, 2023). In customized course services, when functional and hedonic values are positively perceived during the co-creation process, customers may be more willing to continue using the service. Therefore, the following hypotheses are proposed:

H3a: Hedonic value has a significant positive impact on customer retention;

H3b: Functional value has a significant positive impact on customer retention;

Combining Hypotheses 1 and 2, in customized marketing, if customers receive positive experiential value during the engagement process, they are more likely to continue purchasing and maintain or expand their future purchasing scope. Therefore, the following hypotheses are proposed:

H4a: Hedonic value mediates the relationship between customer engagement and customer retention;

H4b: Functional value mediates the relationship between customer engagement and customer retention.

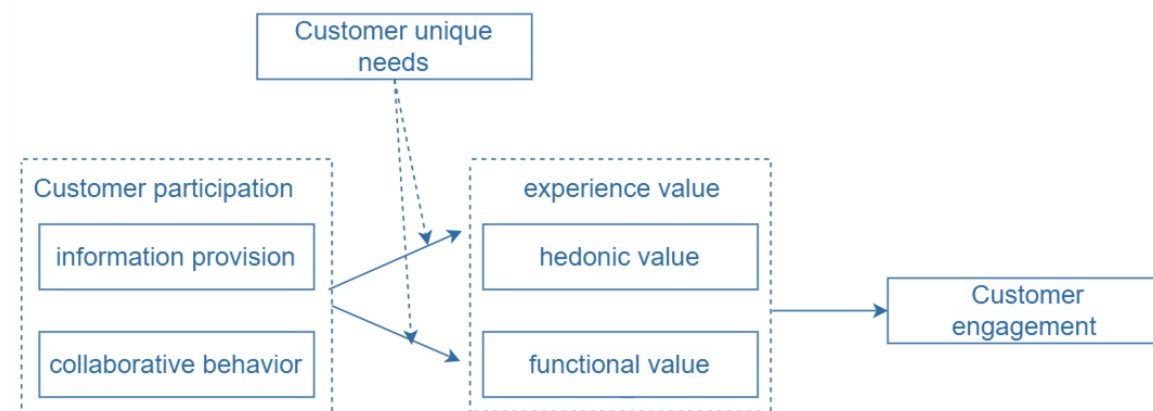
Research on social comparison suggests that individuals may use differentiating behaviors to maintain a distinct sense of self (Taylor and Armes, 2024). In customized service settings, this provides a relevant contextual rationale for examining whether unique customer requirements shape the value derived from engagement. Accordingly, unique requirements are examined as a moderator of the relationship between customer engagement and experiential value. Therefore, the following hypotheses are proposed:

H5a: Customer unique needs have a positive moderating effect on the relationship between customer engagement and hedonic value;

H5b: Customer unique needs have a positive moderating effect on the relationship between customer engagement and functional value.

Based on the proposed hypotheses, Figure 1 presents the conceptual model of the study, integrating the direct effects of customer engagement on customer retention, the mediating roles of hedonic and functional value, and the moderating role of customer unique needs.

Figure 1. Conceptual Model



Source: Authors' elaboration based on the theoretical framework and hypotheses of the study

The current study lacks a systematic analysis of how customer engagement in customized course contexts influences customer retention through different types of course experiential value. And how this influence is moderated by individual traits such as the need for uniqueness. This study aims to fill this theoretical and empirical gap.

Overall, this study advances value co-creation theory by unpacking how customer engagement translates into experiential value and long-term retention in customized course-based services, while identifying individual-level boundary conditions.

2. Research Methodology

This study selects respondents who had participated in customized courses as research subjects. This study chooses these respondents as the research subjects to explore the interaction between customized marketing, customer engagement, customer experience value, and customer retention.

Through a literature review, this study uses mature scales developed by studies both in China and abroad to measure information provision behaviour and co-creation behaviour in customer engagement within customized marketing; the dimensions of hedonic and functional value in customer experience value; and variables related to customer retention and unique needs.

This study used the Wenjuanxing online platform to survey students who had participated in customized courses. The specific implementation process is as follows: First, a pre-survey phase was conducted, selecting 30 students with customized course experience using convenience sampling. Questionnaires were distributed and collected offline. The pre-survey results showed that respondents generally felt the questionnaire design was reasonable and the completion time was appropriate, with the questionnaire's validity and reliability meeting measurement requirements. The formal survey phase then commenced, collecting 483 questionnaires online. After data cleaning and removal of invalid samples, 279 valid questionnaires were obtained, resulting in a valid response rate of 57.76%. The survey process strictly adhered to social survey ethics to ensure the authenticity and reliability of the research data.

This study uses SPSS 27.0 to examine the Pearson correlation coefficients among the variables (as shown in Table 1). The results shows that there were significant positive correlations among the variables ($p < 0.01$). The correlation coefficient between information provision and co-creation was 0.729, and the correlation coefficient between functional value

and hedonic value was 0.878, indicating a high degree of positive correlation between these latent variables. The correlation coefficients between customer retention and information provision, co-creation, functional value, and hedonic value were 0.583, 0.562, 0.713, and 0.709, respectively, all reaching a significant level. This indicates that each influencing factor is related to customer retention to some extent. The correlation coefficients between unique needs and other variables ranged from 0.506 to 0.652, also showing a significant positive correlation, indicating that meeting customer unique needs plays a role in the overall experience and retention process.

Table 1. Pearson Correlation Analysis

Relevance	Information provision	Co-creation	Functional value	Hedonic value	Customer retention	Unique requirements
Information provision	1					
Co-creation	.729**	1				
Functional value	.632**	.758**	1			
Hedonic value	.608**	.717**	.878**	1		
Customer retention	.583**	.562**	.713**	.709**	1	
Unique	.509**	.506**	.588**	.606**	.652**	1

Note: **At the 0.01 level (two-tailed), the correlation is significant.

Source: Authors' calculations based on survey data (n = 279), using SPSS 27.0.

Reliability and Validity Analysis

This study uses AMOS 26.0 to conduct confirmatory factor analysis on each variable. Detailed results are shown in Table 2. The tests reveals that the models for each factor had good fit, meeting the evaluation criteria of $\chi^2/df < 3$, CFI > 0.9, TLI > 0.9, NFI > 0.9, RMSEA < 0.08, and RMR < 0.05, indicating good model fit.

Table 2. Results of confirmatory factor analysis

Model	χ^2/df	CFI	TLI	NFI	RMSEA	RMR
Single factor (TG + CZ + GN+XL+BL+DT)	2.382	0.942	0.934	0.904	0.071	0.043
Two factors (TG+CZ, GN+XL+BL+DT)	2.150	0.952	0.945	0.914	0.064	0.043
Three factors (TG+CZ, GN+XL, BL+DT)	2.040	0.957	0.950	0.919	0.061	0.036
Four Factors (TG+CZ, GN, XL, BL+DT)	2.034	0.957	0.950	0.920	0.061	0.035
Five Factors (TG, CZ, GN, XL, BL+DT)	1.990	0.960	0.952	0.922	0.060	0.032
Six Factors (TG, CZ, GN, XL, BL, DT)	2.011	0.959	0.951	0.923	0.060	0.032

Note: n = 279; TG - information provision; CZ - co-creation; GN - functional value; XL - hedonic value; BL - customer retention; DT - unique needs.

Source: Authors' calculations based on survey data (n = 279), using AMOS 26.0.

Reliability and Validity Testing

To ensure the reliability of the measurement tool, SPSS 27.0 and AMOS 26.0 were used to conduct reliability and validity analyses of the scales (see Table 3). Cronbach's α coefficient was used to test the internal consistency of each scale. The results showed that the Cronbach's α coefficients of each subscale exceeded 0.8, higher than the generally accepted standard of 0.7. This indicates high consistency among the items of each dimension. Convergent validity of each variable was tested using CFA analysis. The results showed that the standardized factor loadings of each item were greater than 0.7, the CR (combined reliability) were all above 0.8, and the AVE (average variance extracted) were all above 0.6, indicating that the measurement scales of each dimension have good convergent validity.

Table 3. Reliability and validity test results

Latent variables	Observed variables	Factor loadings	Cronbach's α	AVE	CR
Information provision	TG1	0.727	0.875	0.640	0.877
	TG2	0.844			
	TG3	0.812			
	TG4	0.813			
Co-creation	CZ1	0.758	0.807	0.595	0.815
	CZ2	0.792			
	CZ3	0.763			
Functional value	GN1	0.802	0.904	0.709	0.907
	GN2	0.829			
	GN3	0.910			
	GN4	0.823			
Hedonic value	XL1	0.762	0.867	0.693	0.871
	XL2	0.803			
	XL3	0.516			
Customer retention	BL1	0.792	0.861	0.619	0.866
	BL2	0.643			
	BL3	0.867			
	BL4	0.828			
Unique needs	DT1	0.816	0.904	0.707	0.906
	DT2	0.852			
	DT3	0.890			
	DT4	0.803			

Source: Authors' calculations based on survey data (n = 279), using SPSS 27.0 and AMOS 26.0.

Hypothesis Testing

This study used SPSS 27.0 for hierarchical regression analysis to explore the relationships among customer engagement, functional value, hedonic value, customer retention, and unique needs (see Table 4).

Regression analysis showed that customer engagement had a significant positive impact on customer retention ($\beta=0.553$, $P<0.001$). As shown in Model 6 of Table 4, after adding

customer engagement, it explained 24.1% of the variation in customer retention. This indicates that the higher the level of customer engagement, the stronger the customer retention intention; therefore, hypothesis H1 is valid.

In Models 2 and 4, customer engagement has a significant positive impact on both functional value ($\beta=0.688$, $P<0.001$) and hedonic value ($\beta=0.688$, $P<0.001$). However, in Models 7 and 8, adding functional value ($\beta=0.568$, $P<0.001$) and hedonic value ($\beta=0.539$, $P<0.001$) to customer engagement and customer retention respectively both show a significant positive impact on customer retention. At this point, the direct effect of customer engagement significantly decreases in Models 7 ($\beta=0.162$, $P<0.01$) and 8 ($\beta=0.193$, $P<0.01$), indicating that hedonic and functional values play a partial mediating role between customer engagement and customer retention. Therefore, hypotheses H2a, H2b, H3a, and H3b are valid.

The principal regression results are summarized in Table 4, while the complete hierarchical regression specifications (Models M1–M9) are reported in Appendix Table A1.

Table 4. Summary of Regression Results

Hypothesis	Relationship	β	p-value	Result
H1	Customer Engagement $\rightarrow$ Customer Retention	0.553	<0.001	Supported
H2a	Customer Engagement $\rightarrow$ Hedonic Value	0.688	<0.001	Supported
H2b	Customer Engagement $\rightarrow$ Functional Value	0.688	<0.001	Supported
H3a	Hedonic Value $\rightarrow$ Customer Retention	0.539	<0.001	Supported
H3b	Functional Value $\rightarrow$ Customer Retention	0.568	<0.001	Supported

Source: Authors' calculations based on survey data ($n = 279$), using SPSS 27.0.

This study uses the Process plugin in SPSS 27.0 to further explore the influence of functional value and hedonic value as mediating variables. A 95% confidence level was selected, and the Bootstrap method is used for resampling to test the mediation effect (results are detailed in Table 5). The results show that the individual mediating effects of functional value and hedonic value are 0.224 and 0.231, respectively. The confidence intervals for the two mediation paths are [0.076, 0.359] and [0.092, 0.371], respectively, and the confidence intervals do not include 0. Their respective effect proportions are 38.31% and 39.38%. Furthermore, the indirect effect accounts for 77.69% of the total effect in the model, indicating that both hedonic value and functional value have significant mediating effects. Therefore, hypotheses H4a and H4b are valid.

Table 5. Mediation effect test

Effect	Path	Effect	Boot SE	T	P	Boot LLCI	Boot ULCI	Effect Proportion
Total Effect		0.581	0.056	10.469	0.000	0.472	0.691	
Direct Effect	CY $\rightarrow$ BL	0.127	0.067	1.905	0.058	-0.004	0.258	22.29%
Indirect Effect	CY $\rightarrow$ BL	0.454	0.060			0.329	0.565	77.69%
	CY $\rightarrow$ GN $\rightarrow$ BL	0.224	0.071			0.076	0.359	38.31%
	CY $\rightarrow$ XL $\rightarrow$ BL	0.231	0.071			0.092	0.371	39.38%

Note: CY - customer engagement, GN - functional value, XL - hedonic value, and BL - customer retention.

Source: Authors' calculations based on survey data ($n = 279$), using PROCESS for SPSS 27.0.

This study examines the moderating effect of customer unique needs on the relationships between customer engagement and functional/hedonic value. Using a standardized method (± 1 SD), the conditional effects are evaluated when customer unique needs are one standard deviation below the mean (-1 SD), at the mean, and one standard deviation above the mean ($+1$ SD). The relevant results are reported in Tables 6 and 7.

Table 6. Moderating Effect of Customer Unique Needs on Customer Engagement and Functional Value

Moderator: Customer Unique Needs	Effect		BootSE	BootLLCI	BootULCI
Low unique needs (-1 SD)	0.2721		0.0582	0.1528	0.3821
Mean unique needs (Mean)	0.3491		0.0499	0.2483	0.445
High unique needs ($+1$ SD)	0.426		0.0689	0.2847	0.5556

Source: Authors' calculations based on the moderation analysis using PROCESS for SPSS 27.0.

Table 7. Moderating Effect of Customer Unique Needs on Customer Engagement and Hedonic Value

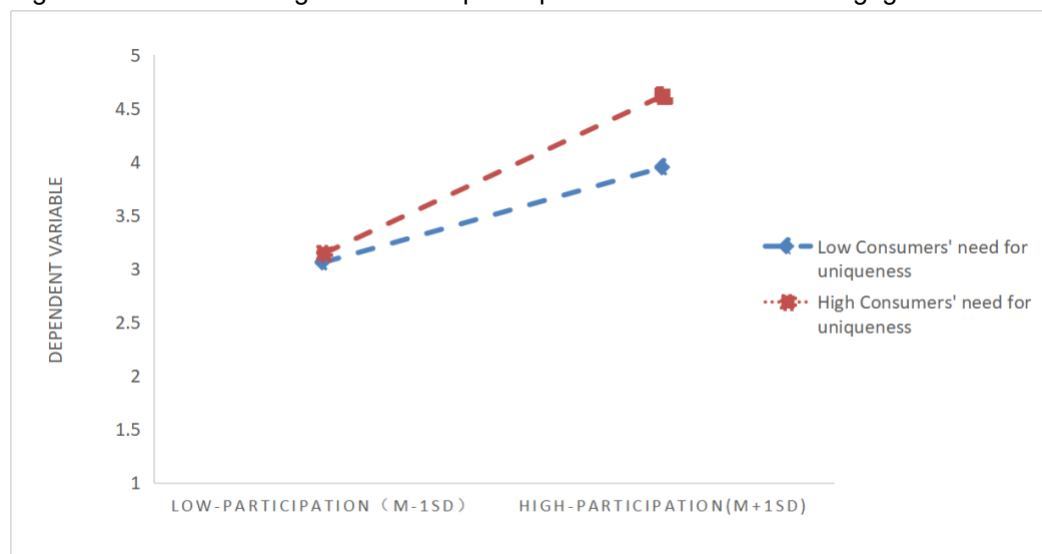
Moderator: Customer Unique Needs	Effect	BootSE	BootLLCI	BootULCI
Low unique needs (-1 SD)	0.2411	0.0576	0.1232	0.3513
Mean unique needs (Mean)	0.3037	0.0471	0.2078	0.3962
High unique needs ($+1$ SD)	0.3662	0.0638	0.2378	0.4853

Source: Authors' calculations based on the moderation analysis using PROCESS for SPSS 27.0.

Customer unique needs significantly moderate the relationship between customer engagement and functional value at low (-1 SD; $\beta = 0.2721$, 95% CI = [0.1528, 0.3821]), mean ($\beta = 0.3491$, 95% CI = [0.2483, 0.4450]), and high ($+1$ SD; $\beta = 0.4260$, 95% CI = [0.2847, 0.5556]) levels. Customer unique needs also significantly moderate the relationship between customer engagement and hedonic value at low (-1 SD; $\beta = 0.2411$, 95% CI = [0.1232, 0.3513]), mean ($\beta = 0.3037$, 95% CI = [0.2078, 0.3962]), and high ($+1$ SD; $\beta = 0.3662$, 95% CI = [0.2378, 0.4853]) levels.

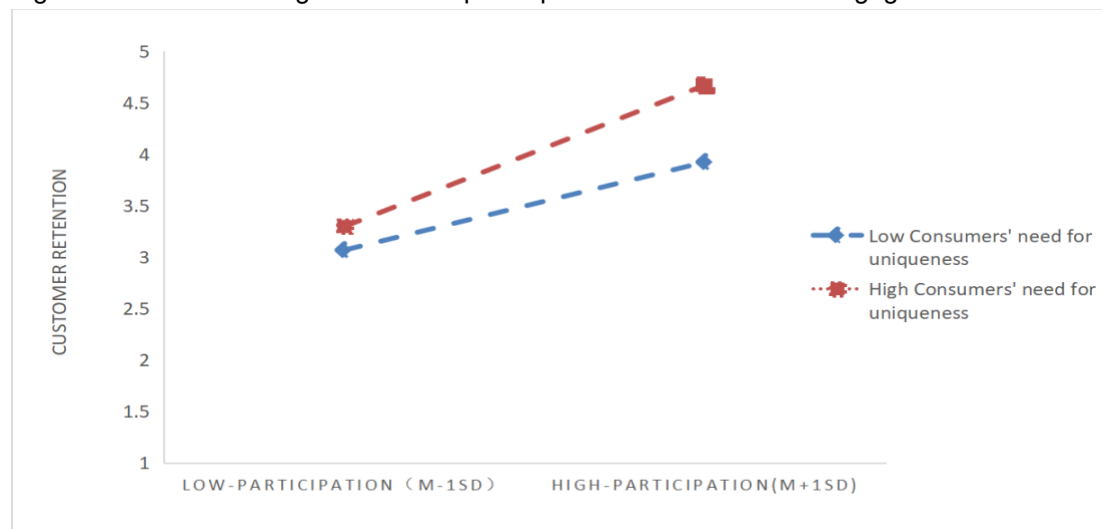
As illustrated in Figures 2 and 3, the positive relationship between customer engagement and both functional and hedonic value becomes stronger as the level of customer unique needs increases.

Figure 2. The moderating effect of unique requirements on customer engagement and functional value



Source: Authors' calculations based on the moderation analysis using PROCESS for SPSS 27.0.

Figure 3. The moderating effect of unique requirements on customer engagement and hedonic value



Source: Authors' calculations based on the moderation analysis using PROCESS for SPSS 27.0.

Conclusion

Based on research by studies both in China and abroad, this study explores the impact of customized courses on customer experience value and retention, using students and consumers who have participated in customized courses as research subjects. The study found that: 1. Customer engagement has a significant positive impact on customer retention. 2. Customer engagement has a significant positive impact on both hedonic and functional values within customer experience value. 3. Both hedonic and functional values within customer experience value have a significant positive impact on customer retention. 4. Both functional and hedonic values within customer experience value play a mediating role in the relationship between customer engagement and customer retention. 5. Customer unique needs have a moderating effect on the relationship between customer engagement and hedonic value, and between customer engagement and functional value.

This study systematically reveals the intrinsic mechanism by which customer engagement influences customer retention in customized course scenarios within the framework of value co-creation theory. First, it introduces value co-creation theory into the context of customized course-based services, moving beyond the limitations of traditional teaching models or technology-oriented perspectives and expanding the boundaries of theoretical application. Second, it distinguishes and examines the mediating roles of functional and hedonic values, revealing the path by which customer engagement influences retention intentions through multidimensional experiential value. Furthermore, it introduces course-related unique requirements as a moderating variable, revealing the boundary conditions of customer heterogeneity in value co-creation and addressing theoretical concerns regarding individual differences in participation effects. Overall, this paper constructs a moderated mediation model of "customer engagement-experiential value-customer retention," providing a systematic theoretical explanation for understanding the dynamic mechanism of value co-creation in customized course service scenarios. From an applied economics standpoint, this moderated mediation framework also informs how educational firms can strategically invest in co-creation infrastructure to maximize value output, including student skill acquisition, labor market readiness, and cost-efficiency of education delivery.

Based on the perspective of dynamic demand, this study reveals the intrinsic mechanism by which customer engagement behavior affects customer retention in customized education services through empirical testing.

The empirical results carry significant implications for firm-level efficiency in the educational services sector. Customer engagement has a direct driving force on customer retention, and educational institutions need to strengthen the design of engagement mechanisms. It is recommended to establish a dual learning system, that is, to stimulate customer demand through exploratory learning (such as innovation competitions) and to deepen existing value-driven elements through utilization learning (such as satisfaction tracking and course optimization). Some studies have also pointed out that: embedding knowledge sharing platforms into courses, actively inviting customers to share their real learning experiences or successful practice cases, and integrating these contents into teaching resources, while setting up a tiered reward mechanism, such as participating in points redemption for value-added services, linking economic benefits with knowledge contributions (Hamari et al., 2014). At the same time, the customer engagement process should be effectively controlled regularly to ensure that cooperative behavior truly enhances service value.

Secondly, institutions should focus on improving the functional and hedonistic value of customers. In terms of functional value, the practicality of courses needs to be strengthened. After understanding the basic needs of customers, modular knowledge system design can be carried out to customize courses for customers, so as to achieve precise improvement in learning efficiency. In terms of hedonistic value, institutions can design interactive gamified scenarios on the learning platform to increase the learning experience of customers. Some studies have also proposed establishing a virtual learning community achievement system, holding case competitions regularly, and publicizing the winning solutions to improve the hedonistic value of customers (Zainuddin et al., 2020). However, training institutions also need to avoid "emphasizing form over content". Over-design of entertainment projects may affect the learning efficiency of customers. At the same time, institutions also need to regularly track the practical value and experience value of customers in real time and actively respond to customer feedback. Enhancing these two dimensions of experiential value directly translates into improved cost-efficiency of education delivery, as platforms that retain learners reduce the marginal cost of user acquisition over time.

Finally, the unique needs of customers play the role of "demand amplifier" between customer engagement and value creation. In response to the moderating effect of unique customer needs, institutions need to build a dynamic response system, implement hierarchical management of customer needs, equip high-unique groups with dedicated course consultants, and provide customized personalized learning solutions. As some studies have proposed: build a dynamic mapping model of "demand-solution", use real-time data generated during customer engagement (such as classroom interaction heatmaps, etc.) to regularly update personalized learning paths, and set corresponding assessment indicators, thereby increasing the renewal willingness of customers with strong unique needs (Taylor et al., 2021). Therefore, institutions need to pay attention to the moderating effect of unique customer needs between customer participation and experience value.

Broadly, these findings speak to the role of educational platforms as value-creating firms in the digital economy. As the education sector undergoes digital transformation, platforms that leverage BI (Business Intelligence) integration and course customization to deepen learner engagement gain a structural competitive advantage. Such mechanisms enable firms to capture greater market share, reduce churn-related costs, and improve overall service sector efficiency, outcomes that are central to the applied economics of digital education

The limitations of this study are as follows: First, the primary research subject was university students; future studies could select different groups to increase sample diversity. Second, this study used unique needs as a moderating variable; future studies could consider other moderating factors, such as channel attractiveness, which might provide a more comprehensive explanation of the relationship between online service scenarios and customer retention intentions.

CRedit Authorship Contribution Statement

Wang Zi Xing: Conceptualization, Methodology, Writing – Original Draft. Lyu Yang: Data Curation, Formal Analysis, Writing – Original Draft. Wong Cheehoo: Supervision, Writing – Review & Editing. Li Guangyu: Investigation, Data Curation. Luo Xiyuan: Visualization, Writing – Review & Editing. Christian Wiradendi Wolor: Writing – Review & Editing, Investigation

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Conflict of Interest Statement

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Ethical Approval Statement

This study was conducted in accordance with applicable ethical standards. All participants were students who had voluntarily participated in customized courses, and informed consent was obtained from all participants prior to their inclusion in the study. No sensitive personal information was collected, and all responses were anonymized to ensure participant confidentiality.

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Appendix A

Table A1. Full Hierarchical Regression Results

Variables	Functional Value		Hedonic Value		Customer Retention				
	M1	M2	M3	M4	M5	M6	M7	M8	M9
Gender	0.079	0.08	0.04	0.041	-0.015	-0.014	-0.06	-0.036	-0.005
Age	0.322	0.145	0.32	0.149	0.265	0.123	0.041	0.043	0.035
Education Level	-0.213	-0.047	-0.175	-0.014	-0.138	-0.004	0.022	0.003	0.019
Occupation	0.029	-0.033	0.009	-0.052	0.095	0.045	0.064	0.073	0.036
Customer Engagement		0.688***		0.667***		0.553***	0.162**	0.193**	0.359***
Functional Value							0.568***		
Hedonic Value								0.539***	
Unique Needs									0.426***
Customer Engagement× Customer Unique Needs									0.101**
R^2	0.19	0.568	0.157	0.511	0.146	0.388	0.526	0.528	0.523
ΔR^2	0.202	0.374	0.169	0.351	0.158	0.241	0.137	0.139	0.01
F	17.325	74.168	13.933	59.174	12.85	36.275	52.373	52.934	44.587

Note: n = 279; *p < 0.05, **p value < 0.01, ***p value < 0.001.

Source: Authors' calculations based on survey data (n = 279), using SPSS 27.0.