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## Uncovering the Factors Affecting the Behavior of Purchasing the Online Exercise Course

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### **Abstract**

*Online exercise courses (OEC) have emerged as a global fitness trend, and this research specifically targets the factors influencing Chinese consumers' purchasing decisions in this domain. The study leverages an online questionnaire to collect data from 629 participants, and undertakes a comprehensive data analysis approach. This includes descriptive statistical analysis, reliability and validity tests, confirmatory factor analysis, structural equation modeling, and path analysis. Results highlight perceived value (PV), Identity (IO), and service quality (SQ) as key determinants in influencing motivation to purchase (MP), intention to purchase (IP), and behavior of purchasing (BP) in the OEC context. Significantly, the study unveils the mediating roles of motivation and intention in the relationships between perceived value, Identity, service quality, and behavior of purchasing, underscoring the necessity for online fitness platforms to focus strategically on enhancing service quality, reinforcing the perceived value, and building a strong community identity. These insights are crucial for course providers, marketers, and platform developers, advocating for a user-centric approach in platform design and clear communication of value. This research not only enriches the existing literature but also provides a robust foundation for future strategies and studies in this dynamic and rapidly growing field.*

**Keywords:** *online Exercise Courses, Chinese consumer behavior, perceived value, purchase motivation, market strategies*

### **1. Introduction**

Online exercise courses, a dynamic offshoot of the digital revolution, have significantly reshaped the fitness industry worldwide, particularly in China (Lee et al., 2021). These courses represent a major shift from traditional fitness methods, offering increased accessibility and a new paradigm in fitness consumption (Staubitz et al., 2015). In the Chinese market, this transformation takes on unique characteristics, influenced by the country's distinct socio-cultural landscape (Zhou et al., 2021). The integration of digital technology in fitness aligns with the fast-paced lifestyle of modern consumers, yet the specific consumer behaviors and cultural nuances in China introduce complex challenges and opportunities.

Despite the rising popularity, online exercise platforms in China face inconsistencies in success and engagement (Chen & Chen, 2021). This highlights a gap in understanding the factors driving consumer behavior towards these platforms in the Chinese context. The current

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research problem thus revolves around comprehensively understanding these consumer behavior factors and addressing the challenges in content quality, user engagement, and monetization strategies (Chen & Chen, 2021).

This study, therefore, aims to bridge these gaps by providing a comprehensive analysis of the multifaceted factors influencing Chinese consumers' purchasing behaviour for online exercise courses. It seeks to explore the interplay between service quality, social identity, cultural influences, perceived value, and consumer behavior, and to evaluate the effectiveness of government policies in this sector. Additionally, this study aims to offer strategic insights for industry stakeholders, thereby enhancing the market appeal and sustainability of online fitness platforms in China.

The subsequent section conducts a thorough literature review, setting the research context and theoretical underpinnings. The following part focuses on the research paradigm, detailing the design, data collection, analysis processes, and ethical considerations. The penultimate section presents the quantitative findings and their relevance to the posed research questions. Finally, the concluding section wraps up the study, discussing its implications, and contributions to theory and practice, acknowledging its limitations, and suggesting directions for future research in this field.

## **2. Literature Review**

### **2.1 Theoretical Approach**

Consumer Value Theory (CVT) in marketing and consumer behavior research explains consumer decisions and value derivation (Yeh et al., 2016). CVT suggests buying decisions are based on perceived value—balance between perceived benefits and sacrifices (Rantanen, 2021). It comprises dimensions like functional, emotional, social, monetary, and epistemic value. Influenced by personal, situational, and cultural factors, CVT also considers consumer role in value co-creation, especially in service interactions. It helps understand consumer choices and behaviors, guiding businesses to tailor offerings and strategies. In online fitness, CVT addresses various value aspects, influencing motivation, intention, and behavior.

Social Identity Theory (SIT) explores the psychological underpinnings of intergroup discrimination, focusing on how individuals categorize themselves and others into groups, such as 'in-group' and 'out-group' (Scheepers & Ellemers, 2019). Central to SIT is the idea that self-concept partly derives from group memberships (Morris & Webb, 2022). Key components include Social Categorization (grouping based on shared traits), Social Identification (adopting group norms and behaviors), Social Comparison (comparing one's group with others for positive distinctiveness), Positive distinctiveness (preference for in-group), and factors like belongingness, In-group favoritism, Identity reinforcement, and the influence of influencers and Ambassadors in online communities. These elements collectively shape consumer behaviors in online fitness platforms, highlighting the role of social dynamics and group affiliation in consumption choices.

Service Quality Theory focuses on evaluating service against customer expectations (Su et al., 2022), crystallized in the SERVQUAL model with five dimensions: Tangibles, Reliability, Responsiveness, Assurance, and Empathy (Idayati et al., 2020). Applied to online sports courses, it involves aspects like user interface quality, content reliability, responsiveness to feedback, instructor credibility, and personalized digital interactions. High service quality in

these areas enhances perceived value, trust, and emotional connection, positively influencing user motivation, attitude, and behavior, leading to user retention and positive word-of-mouth, crucial for the success of online sports courses.

The understanding of online exercise course usage in China is effectively conceptualized through the integration of Consumer value theory (CVT), Social identity theory (SIT), and service quality theory (SQT). CVT focuses on the balance of perceived benefits and sacrifices, influencing consumer decisions across various dimensions. SIT examines how group affiliations shape self-concept and consumer behavior, while SQT assesses service against customer expectations, influencing user motivation, retention, and behavior. Together, these theories offer comprehensive insights into consumer behavior and decision-making in online fitness platforms.

## 2.2 Hypothesis Development

Perceived value in consumer behavior, particularly for online exercise courses, involves assessing the utility of a product or service based on what is received versus what is given (Yang et al., 2021). It encompasses both tangible aspects like content quality and accessibility, and intangible factors such as personal health benefits and convenience (Idayati et al., 2020). This perceived value significantly influences consumers' purchase intentions; higher perceived value leads to increased motivation for purchase behavior. Factors like content quality, flexibility, health benefits, and cost-effectiveness enhance this value, aligning with Expectancy-Value Theory, which posits that expected desirable outcomes drive behavior motivation.

**H1:** *Perceived Value of OEC positively affect the Behavior of Purchasing OEC.*

In consumer psychology, the relationship between perceived value and purchase intention is crucial (Curvelo et al., 2019). Prospective buyers' perceptions of an online exercise course's value—encompassing course content quality, fitness outcomes, instructor credibility, interactive features, and overall user experience—significantly influence their intention to purchase (Bellhauser et al., 2022). This concept parallels the impact of high-quality information on user satisfaction in e-learning systems, suggesting that positive perceived value strongly predicts an individual's intention to acquire an online exercise course.

**H2:** *Perceived Value of OEC positively affect the Motivation to Purchase OEC.*

In consumer behavior, the identity of an online exercise course—marked by unique characteristics and attributes—plays a crucial role in influencing purchasing decisions (Su et al., 2019). This connection is anchored in the resonance potential buyers feel with the course's identity, encompassing elements like branding, uniqueness, alignment with personal values, and perceived image (Braga, 2023). This resonance enhances their propensity to purchase, mirroring the impact of high-quality information on satisfaction in e-learning systems. A positive identity perception is therefore a significant factor in the decision to invest in an online exercise course.

**H3:** *Perceived Value of OEC positively affect the Intention to Purchase OEC.*

The correlation between the identity of an online exercise course and buyer motivation, rooted in consumer psychology, is significant (Lavuri et al., 2023). The course's identity, through its branding, uniqueness, and alignment with personal values, significantly boosts buyer motivation to purchase (Braga, 2023). This dynamic resembles how quality information in e-learning enhances user satisfaction, indicating that a course's positive identity perception is key

in motivating individuals to acquire it. This study extends these insights into the realm of online exercise courses.

**H4:** *Identity of OEC positively affect the Behavior of Purchasing OEC.*

In online exercise courses, the course identity—encompassing branding, uniqueness, and alignment with personal values—affects an individual's purchase intention (Leung et al., 2022). Identity, defined as the subjective evaluation of a course's distinct attributes, plays a crucial role (Bharadwaj et al., 2022). Similar to how perceived usefulness influences user satisfaction in other models, a positive identity perception significantly drives the intention to purchase an online exercise course.

**H5:** *Identity of OEC positively affect the Motivation to Purchase OEC.*

In the digital education sphere, online exercise courses are increasingly recognized for their impact on consumer behavior. The Technology Acceptance Model (TAM) suggests that high perceived service quality in these courses influences purchase behavior (Ahmad et al., 2020). Empirical studies confirm this link, showing that superior service quality leads to increased purchase intentions. Service quality, encompassing aspects like responsiveness, reliability, and overall user experience, plays a key role in enhancing the likelihood of purchasing and engaging with online exercise courses, reinforcing its importance across various industries (Huang & Kim, 2023).

**H6:** *Identity of OEC positively affect the Intention to Purchase OEC.*

High service quality in online exercise courses positively impacts potential customers' perceptions, fostering trust and elevating their confidence in the course (Sun & Pan, 2023). This enhanced perception translates into increased motivation to purchase. Positive service experiences, indicative of a commitment to customer satisfaction and alignment with learners' needs and goals, further motivate engagement and learning, leading to desired outcomes (Mullins et al., 2023). The added value perceived from exceptional service quality intensifies the motivation to invest in the course, recognizing it as a worthwhile pursuit (Mullins et al., 2023).

**H7:** *Service Quality of OEC positively affect the Behavior of Purchasing OEC.*

Service quality, characterized by attributes such as responsiveness, reliability, and user satisfaction, significantly influences consumer perceptions of value in products or services (Shi & Hu, 2020). Integral to the consumer decision-making process, it instills trust and confidence in buyers, as evidenced by various empirical studies (Mullins et al., 2023). In online exercise courses, high service quality, manifesting as reliable materials, effective user support, and satisfying user interfaces, significantly enhances purchase intentions (Luo et al., 2023). This relationship between perceived service quality and purchase intention highlights the importance of service excellence in influencing consumers' readiness to invest in online exercise courses.

**H8:** *Service Quality of OEC positively affect the Motivation to Purchase OEC.*

Motivation, a key factor in the decision-making process, is influenced by intrinsic elements like personal fitness goals and perceived value (Luo et al., 2023). This concept, rooted in behavioral theories and backed by empirical research, highlights the crucial role of motivation in shaping purchase intentions, especially in the context of consumer psychology (Hong et al., 2023). In

online exercise courses, strong motivation towards fitness and health goals, coupled with the desire for personalized instruction, drives individuals to seek and purchase these courses. This motivation positively impacts their purchase intentions, emphasizing the importance of internal drive-in consumer readiness to invest in such courses.

**H9:** *Service Quality of OEC positively affect the Intention to Purchase OEC.*

In the online fitness education sector, the impact of motivation on purchasing behavior for exercise courses is increasingly recognized. An individual's motivation, driven by personal fitness goals, perceived benefits, and a desire for customized training, significantly influences their decision-making process (Alamri et al., 2020). This concept, anchored in consumer psychology, acts as a dynamic force encouraging actionable steps. Research across various fields confirms that motivation profoundly affects actual purchasing behavior. Specifically, in online exercise courses, strong motivation towards physical well-being and specialized guidance notably enhances the likelihood of not only intending to purchase but also actualizing that intention.

**H10:** *Motivation to Purchase OEC positively affect the Intention to Purchase OEC.*

The intention to purchase online exercise courses is a cognitive commitment influenced by perceived value, fitness goals, and anticipated benefits (Luo et al., 2023). It acts as a guiding force, leading individuals towards specific actions. Within behavioral theories, the link between intention and behavior is evident; strong intentions often translate into actions. For online exercise courses, a firm intention to purchase, driven by fitness aspirations, significantly increases the likelihood of actual purchase (Alamri et al., 2020). This intention serves as a motivational force, encouraging individuals to follow through with their commitment to purchase the course.

**H11:** *Motivation to Purchase OEC positively affect the Behavior of Purchasing OEC.*

Perceived value, which includes benefits, utility, and cost-effectiveness, is key in driving consumer behavior (Tanrikulu, 2021). Similarly, the motivation to purchase, rooted in personal fitness goals and the appeal of online exercise courses, acts as an internal incentive. Psychological theories and empirical studies underline motivation's mediating role between perception and actions, indicating its significance in the consumer decision-making process.

**H12:** *Intention to Purchase OEC positively affect the Behavior of Purchasing OEC.*

The identity of an online exercise course, comprising elements like theme, branding, and instructor personality, plays a crucial role in appealing to individual preferences and motivations (Ismailov & Ono, 2021). A course with a distinct identity, aligned with an individual's aspirations, can significantly motivate them towards purchasing the course. This motivation, driven by personal goals and emotional connections, enhances the likelihood of converting intentions into actual purchases. Motivation thus serves as a critical link between the course's identity and the purchasing decision, underscoring its importance in the decision-making process.

**H13:** *Motivation to Purchase OEC mediates the relationship between the Perceived Value of OEC and Intention to Purchase OEC.*

In the domain of online exercise courses, the interplay between motivation, service quality, and purchase intention is crucial (Qalati et al., 2021). This relationship aligns with established

theoretical models, emphasizing the importance of intrinsic motivation in the purchasing process. Service quality, encompassing tailored content and user-friendly interfaces, significantly impacts this motivation. The enhanced perception of service quality elevates the motivation to purchase, thereby strengthening the intention to buy (Qalati et al., 2021). This model illustrates the complex dynamics in online fitness education, revealing how motivation mediates the link between service quality and purchase intention.

**H14:** *Motivation to Purchase OEC mediates the relationship between the Identity of OEC and Intention to Purchase OEC.*

The interplay between perceived value and purchasing behavior in online exercise courses is highlighted in existing literature, emphasizing the role of motivation (Chiu et al., 2022). Motivation, driven by personal goals and perceived benefits, acts as a mediator between perceived value and purchasing actions (Ismailov & Ono, 2021). This dynamic illustrates how high perceived value in course quality and benefits boosts motivation, leading to behaviors like purchasing, positive word-of-mouth, and continued engagement. This intricate relationship underscores the significant impact of perceived value on consumer behavior in the online fitness education landscape.

**H15:** *Motivation to Purchase OEC mediates the relationship between the Service Quality of OEC and Intention to Purchase OEC.*

Research highlights the significant role of motivation in linking product identity and purchasing behavior, particularly in the realm of online exercise courses (Chen & Yang, 2023). Consumers' motivations are pivotal when the product's identity resonates with their desires, boosting their likelihood to purchase. The identity of an online exercise course, defined by attributes like branding and thematic focus, strongly influences purchasing behavior. This relationship is mediated by motivation, as congruence between course identity and individual fitness aspirations enhances the motivation to purchase, leading to concrete purchasing actions.

**H16:** *Motivation to Purchase OEC mediates the relationship between the Perceived Value of OEC and Behavior of Purchasing OEC.*

Service quality in online exercise courses, encompassing aspects like content and customer support, directly influences the perceived value and utility of the course (Ahmad & Zhang, 2020). A high perception of service quality enhances the attractiveness of the course. Motivation to purchase stems from an individual's internal drive, influenced by personal fitness goals and the perceived benefits and value of the course. This motivation is a key factor in the decision to engage with and purchase the course.

**H17:** *Motivation to Purchase OEC mediates the relationship between the Identity of OEC and Behavior of Purchasing OEC.*

Perceived value in online exercise courses involves a subjective evaluation of factors like course content, features, pricing, and fitness out individual's decision to purchase. Conversely, the intention to purchase reflects a comes (Yang et al., 2021). This multidimensional assessment significantly influences an deliberate decision influenced by factors such as perceived value and personal fitness goals (Su et al., 2019). This intention bridges the gap between the perceived value of the course and the actual purchasing behavior, with a higher perceived value likely enhancing the intention and probability of purchase.

**H18:** *Motivation to Purchase OEC mediates the relationship between the Service Quality of OEC and Behavior of Purchasing OEC.*



The identity of an online exercise course, comprising branding and alignment with personal fitness goals, significantly contributes to its appeal (Castro & Tumibay, 2021). This identity influences the individual's intention to purchase, which emerges from various factors like course identity and personal aspirations. The intention to purchase acts as a mediator between the course's identity and the purchasing behavior, where a strong alignment between the course's identity and individual goals enhances the likelihood of purchase.

**H19:** *Intention to Purchase OEC mediates the relationship between the Perceived Value of OEC and Behavior of Purchasing OEC.*

Service quality in online exercise courses involves multiple attributes, such as content quality, user interface, and customer support, which all contribute to the overall perceived value of the course (Ahmad et al., 2020). This perception, along with factors like personal fitness goals and affordability, shapes the individual's intention to purchase the course.

The intention to purchase acts as a mediator between perceived service quality and purchasing behavior (Khatoon et al., 2020). When individuals recognize high service quality, characterized by exceptional content and support, it increases their intention to invest in the course, thus enhancing the likelihood of actual purchase. This dynamic underlines the significance of service quality in influencing consumer decisions in the realm of online fitness education.

**H20:** *Intention to Purchase OEC mediates the relationship between the Identity of OEC and Behavior of Purchasing OEC.*

The connection between motivation to purchase an online exercise course and the actual purchasing behavior is mediated by the intention to purchase, a concept embedded in psychological and consumer behavior theories (Babin & Harris, 2023). Motivation, the initial driving force, is based on the individual's desire and perceived benefits, but it doesn't directly lead to purchasing behavior (Jingjing Cheng & et al., 2023). The intention to purchase, influenced by factors like perceived value and trust, acts as an intermediary, reflecting the decision to act on the motivation (Pei Diao & et al., 2023). A strong intention to purchase typically leads to the final action of enrolling in the course, influenced by factors like ease of purchase and user experience (Pei Diao & et al., 2023).

**H21:** *Intention to Purchase OEC mediates the relationship between the Service Quality of OEC and Behavior of Purchasing OEC.*

The study of online exercise marketing, particularly in the Chinese context, uncovers a multifaceted landscape interlinking various disciplines (Jing Fu & et al., 2023). It emphasizes consumer value theory, social identity theory, and service quality theory to understand consumer behavior in online exercise courses (Hosta & Zabkar, 2021). With the shift to digital platforms, factors like digital engagement, content marketing, and consumer psychology become pivotal (Jiang et al., 2022). These platforms offer benefits like flexibility and community, but face challenges like user safety and market saturation (Ming et al., 2023). The integration of AI and wearable tech presents new opportunities (Yuan et al., 2023). This research leads to a comprehensive framework exploring how perceived value, course identity, and service quality affect consumer behavior, motivation, and purchase intentions in online exercise courses.

**H22:** *Intention to Purchase OEC mediates the relationship between the Motivation to Purchase OEC and Behavior of Purchasing OEC.*

### **3. Methodology**

This study adheres to a quantitative research methodology. A purposive sampling strategy was employed to select 629 participants, who have the experience on consuming the online exercise courses within the online questionnaire. And then, we use the 5-point Likert scale to measure the variables.

Perceived value of online exercise course is from Singh et al. (2021), which encompasses aspects such as content quality, instructor expertise, and anticipated outcomes post-completion. Identity of online exercise course employs an analytical framework rooted in Jiang et al. (2022)'s methodology to examine the identity of online exercise courses. This identity concept includes distinctiveness, branding, and alignment with users' personal or aspirational identities. Service quality within online exercise platforms is defined by its operational features, encompasses elements such as interface usability, navigational ease, and customer support effectiveness. The analytical framework for this investigation is based on the approach proposed by Chuenyindee et al. (2022). Motivation to purchase online exercise course encompasses a spectrum of motivators, extending from intrinsic factors such as the pursuit of personal development to extrinsic elements like the sway of social influence. The research intends to classify these various motivations and evaluate their effect on consumer purchasing patterns. The questionnaire employed for this assessment draws upon the framework established by Cui et al. (2021), adapting its items to fit the context of this study. Intention to purchase is a metric designed to estimate the probability of a respondent's future buying behavior. This measure examines the circumstances that might influence a user's decision to acquire another online exercise course, including factors like satisfaction with a prior course or the allure of promotional offers. The methodology for this evaluation is based on the theoretical model developed by Rausch and Kopplin (2021). Behavior of purchasing the online exercise course examines historical purchasing patterns in the context of online exercise courses, encompassing variables like purchase frequency, course variety, and typical expenditure. The approach for this analysis is anchored in the methodology outlined by Rausch and Kopplin (2021).

The data analysis for this research encompasses a series of methodologically rigorous steps, each crucial for interpreting and understanding the gathered data. The initial phase of data analysis involves descriptive statistical analysis. Following the descriptive analysis, we conduct a Reliability Analysis. This phase is centered around ensuring the internal consistency of our measurement tools, primarily through the computation of Cronbach's Alpha. As noted by Wei et al. (2023), a Cronbach's Alpha threshold above 0.7 is considered satisfactory, signifying that the scales and questionnaires employed are reliable and produce consistent results across various data collection instances. The subsequent analytical step involves Confirmatory Factor Analysis (CFA). This method is pivotal in validating the structure of the variables measured and in uncovering latent constructs influencing observed variables. Ensuring data suitability for CFA involves preliminary tests like the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity, as recommended by Yamane et al. (2023). The final aspect of our data analysis is Structural Equation Modeling (SEM). SEM is an advanced statistical technique that allows for the examination of complex relationships between observed and latent variables. This method is integral in mapping out the causal pathways influencing consumer behaviors, particularly in contexts like online exercise course purchases. The effectiveness of the SEM is evaluated using various goodness-of-fit indices including the Chi-Square, Comparative Fit



Index (CFI), and Root Mean Square Error of Approximation (RMSEA), following the guidelines set forth by Park et al. (2023).

## 4. Results

### 4.1 Descriptive Analysis

Table 1 presents data on online exercise class preferences and demographic breakdowns of participants, several key insights emerge. Table 1 categorizes responses from 629 individuals, detailing their preferred online exercise classes, gender, age, residential area, annual income, and education level. In terms of exercise class preference, "Keep" emerges as the most popular, with 23.2% of respondents participating, followed closely by "Jump Rope Everyday" at 20.7%, and "Circle of Happiness" at 20.0%. This data suggests a diverse range of popular online fitness programs, with no single option dominating the market.

**Table 1.** Essential Information.

		Frequency	Percent
Which of the following online exercise class have you taken the most	Dongdong	118	18.8
	Keep	146	23.2
	Jump Rope Everyday	130	20.7
	Circle of Happiness	126	20.0
	Huawei Sports Health	109	17.3
Gender	Male	325	51.7
	Female	304	48.3
Age	<20 years old	61	9.7
	20-30	192	30.5
	30-40	196	31.2
	40-50	70	11.1
	50-60	57	9.1
	>60	53	8.4
Area	Rural	168	26.7
	City	461	73.3
Annual Income	Below 50,000 yuan	95	15.1
	50,000-100,000 yuan	109	17.3
	100,000-150,000 yuan	97	15.4
	150,000-200,000 yuan	169	26.9
	More than 200,000 yuan	159	25.3
Education Level	Undergraduate degree or below	47	7.5
	Undergraduate	228	36.2
	Master	266	42.3
	PhD	88	14.0

The gender distribution among participants is relatively balanced, with a slight male majority (51.7%). Age-wise, the majority of respondents fall within the 20-40 age range, cumulatively accounting for 61.7% of participants. This indicates that younger adults are more engaged in online fitness classes, which could be due to higher internet literacy or a greater focus on fitness in these age groups.

Regarding the residential area, a significant majority (73.3%) of participants reside in cities, reflecting either a higher concentration of these services in urban areas or greater urban interest

in online fitness. Income levels vary, with the largest group (26.9%) earning between 150,000 to 200,000 yuan annually, suggesting that middle to upper-middle-income individuals is more likely to engage in these classes.

Finally, the education level of participants skews towards higher education, with 42.3% holding a master’s degree and 14.0% a PhD. This could imply a correlation between higher education and a propensity to engage in online fitness classes, possibly due to greater awareness of health and fitness or more disposable income for such services. Overall, the data from Table 4-4 offers a comprehensive overview of the demographics of online exercise class participants, highlighting trends in preferences and socio-economic characteristics.

#### 4.2 Reliability and Validity Analysis

Table 2 assesses various dimensions of online exercise courses, the data reveals significant insights. The study variables—Perceived Value, Identity, Service Quality, Motivation to Purchase, Intention to Purchase, and Behavior of Purchasing—are evaluated through a specific number of questions, with Cronbach’s alpha values indicating high internal consistency for each variable (ranging from 0.826 to 0.892). These high alpha values suggest that the survey instruments used are reliably measuring the constructs they intend to. For instance, the Identity of the Online Exercise Course, with the highest alpha value of 0.892, indicates a very reliable measurement across its six questions. Similarly, the consistent reliability scores above 0.8 for the other variables demonstrate that the survey’s design effectively captures the various facets of consumer engagement with online exercise courses.

**Table 2** Reliability Statistics.

Study variables	Number of questions	Cronbach’s $\alpha$
Perceived Value of Online Exercise Course	4	0.826
Identity of Online Exercise Course	6	0.892
Service Quality of Online Exercise Course	5	0.868
Motivation to Purchase the Online Exercise Course	5	0.861
Intention to Purchase the Online Exercise Course	4	0.830
Behavior of Purchasing the Online Exercise Course	4	0.826

Table 3 presents KMO measure and Bartlett’s Test of Sphericity, both crucial in assessing the adequacy of a sample size and the appropriateness of factor analysis. The KMO measure, at 0.945, is significantly high, indicating that the sample is exceedingly suitable for factor analysis. Generally, a KMO value greater than 0.6 is considered acceptable, with values closer to 1 indicating stronger correlations between pairs of variables in the analysis.

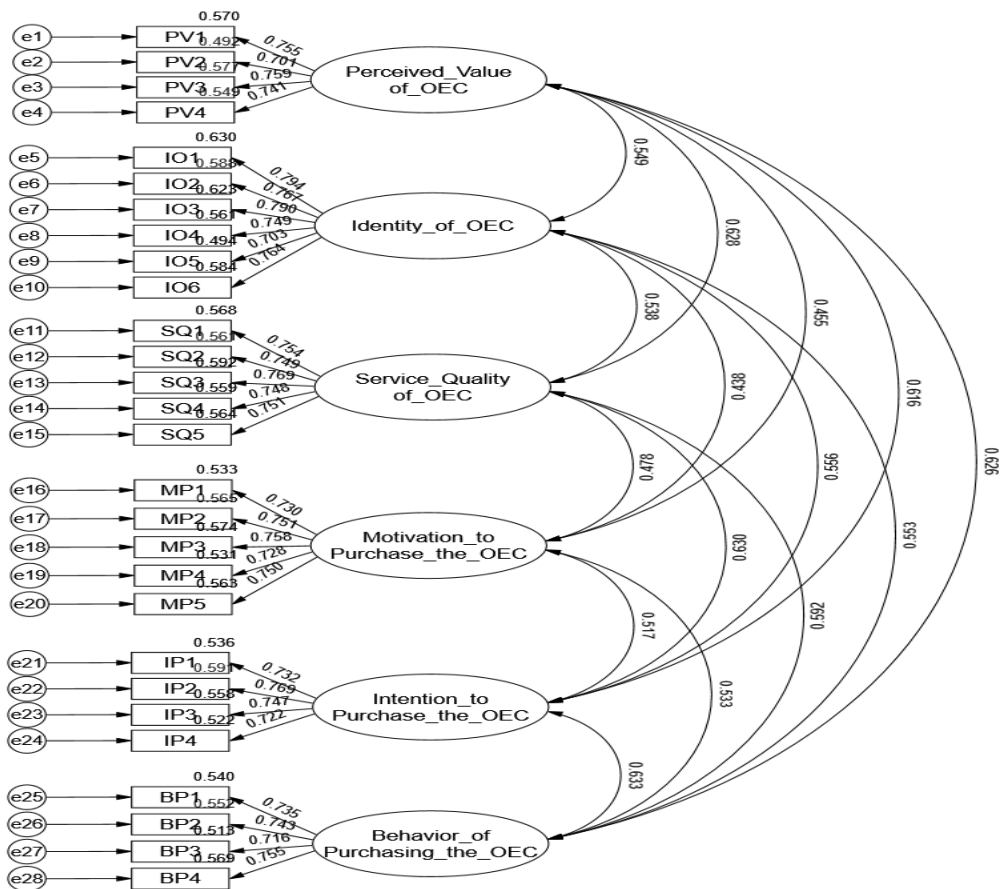
Bartlett’s Test of Sphericity further supports the suitability of the data for factor analysis. This test checks the hypothesis that the correlation matrix is an identity matrix, which would indicate that variables are unrelated and unsuitable for structure detection. The test yields an approximate Chi-Square value of 8791.197 with 378 degrees of freedom and a significance level (Sig.) of 0.000. This extremely low significance level (less than 0.05) decisively rejects the null hypothesis, confirming that the variables are related and, therefore, suitable for factor analysis.

In summary, both the high KMO measure and the significant Bartlett's Test results collectively indicate that factor analysis is an appropriate statistical technique for this dataset, as the variables demonstrate sufficient inter correlations for such an analysis.

**Table 3** kmo and Bartlett's Test.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.945
Bartlett's Test of Sphericity	Approx. Chi-Square	8791.197
	df	378
	Sig.	.000

### 4.3 Confirmatory Factor Analysis



**Figure 1.** The Measurement Model for the Confirmatory Factor Analysis.

Table 4 presents a concise evaluation of the fit metrics for a measure model, comparing the obtained results with established reference standards. The results indicate an exemplary model fit: the ratio of Chi-square to degrees of freedom ( $\chi^2/df$ ) is 1.362, well below the threshold of 3, suggesting a good fit. The Root Mean Square Error of Approximation (RMSEA) is 0.024, significantly lower than the standard of 0.08, indicating a close fit. Additionally, all indices (GFI, AGFI, NFI, TLI, CFI) exceed the recommended value of 0.9, with values ranging from 0.942 to 0.986, demonstrating that the model has a robust fit with the data. These metrics collectively

affirm the model's validity and reliability in the context of the study. Figure 1 portrays the measurement model for the confirmatory factor analysis.

**Table 4** Measure Model Fit Metrics.

Fit index	$\chi^2/df$	RMSEA	GFI	AGFI	NFI	TLI	CFI
Reference standards	<3	<0.08	>0.9	>0.85	>0.9	>0.9	>0.9
Result	1.362	0.024	0.952	0.942	0.949	0.984	0.986

Table 5 delineates the convergence validity of a study on online exercise courses, showcasing the factor loading, Composite Reliability (CR), and Average Variance Extracted (AVE) for various latent variables and their observation indicators. Each latent variable, representing a distinct construct like Perceived Value, Identity, Service Quality, Motivation to Purchase, Intention to Purchase, and Behavior of Purchasing the Online Exercise Course, is assessed through multiple observation indicators (e.g., PV1, PV2 for Perceived Value). Factor loading for these indicators, predominantly above 0.7, indicate a strong relationship between indicators and their respective latent variables, suggesting that the indicators are appropriate measures of the constructs.

The CR values, all above 0.8, confirm the internal consistency of the indicators for each construct, indicating reliable measurements. The AVE values, which measure the average variance captured by the indicators relative to the variance due to measurement error, exceed 0.5 for each construct, affirming that more than half of the variance observed in the indicators is due to the latent variables. This table effectively demonstrates that the constructs are well-defined and accurately measured by their indicators, establishing the convergent validity of the model used in the study. This solidifies the study's findings, providing a foundation for both theoretical and practical implications in the context of online exercise courses.

**Table 5** Convergence Validity.

Latent variables	Observation indicators	Factor loading	CR	AVE
Perceived Value of Online Exercise Course	PV1	0.755	0.828	0.547
	PV2	0.701		
	PV3	0.759		
	PV4	0.741		
Identity of Online Exercise Course	IO1	0.794	0.892	0.580
	IO2	0.767		
	IO3	0.790		
	IO4	0.749		
	IO5	0.703		
	IO6	0.764		
Service Quality of Online Exercise Course	SQ1	0.754	0.868	0.569
	SQ2	0.749		
	SQ3	0.769		
	SQ4	0.748		
	SQ5	0.751		
Motivation to Purchase the Online Exercise Course	MP1	0.730	0.861	0.553
	MP2	0.751		
	MP3	0.758		
	MP4	0.728		
	MP5	0.750		
Intention to Purchase the Online Exercise Course	IP1	0.732	0.831	0.552
	IP2	0.769		
	IP3	0.747		
	IP4	0.722		
Behavior of Purchasing the Online Exercise Course	BP1	0.735	0.827	0.544
	BP2	0.743		
	BP3	0.716		
	BP4	0.755		

In this research on online exercise courses, the discriminant validity of the model was rigorously assessed, as evidenced in the presented table 6. The focal point of this analysis lies in the comparison between the square roots of the Average Variance Extracted (AVE) for each latent variable and the correlations among these variables. The latent variables in question include Perceived Value, Identity, Service Quality, Motivation to Purchase, Intention to Purchase, and Behavior of Purchasing the Online Exercise Course. Notably, the square root of the AVE for each construct (values along the diagonal) consistently exceeded the inter-construct correlations (off-diagonal values), thereby establishing strong discriminant validity. For instance, the square root of the AVE for Perceived Value (0.740) was higher than its correlations with other constructs, which ranged from 0.455 to 0.626. This pattern was replicated across all constructs, with each demonstrating a distinct and statistically significant ( $p < 0.001$ ) differentiation from others. This clear demarcation amongst constructs underscores the robustness of the model, affirming that each construct is uniquely defined and contributes significantly to our understanding of consumer behavior in the context of online exercise courses.

**Table 6** Discriminant Validity Test.

Latent variables	1	2	3	4	5	6
Perceived Value of Online Exercise Course	0.740					
Identity of Online Exercise Course	0.549** *	0.762				
Service Quality of Online Exercise Course	0.628** *	0.538 ***	0.754			
Motivation to Purchase the Online Exercise Course	0.455** *	0.438 ***	0.478** *	0.744		
Intention to Purchase the Online Exercise Course	0.616** *	0.556 ***	0.630** *	0.517 ***	0.743	
Behavior of Purchasing the Online Exercise Course	0.626** *	0.553 ***	0.592** *	0.533 ***	0.633* **	0.738

**Note:** The diagonal is the square root of the corresponding dimension AVE\*\*\*:  $p < 0.001$

#### 4.4 Structural equation model

Table 7 demonstrate an excellent fit of the model to the data. The  $\chi^2/df$  ratio is 1.362, significantly below the recommended threshold of 3, indicating a good fit. The RMSEA value stands at 0.024, which is well below the maximum acceptable limit of 0.08, suggesting a close fit of the model with the observed data. The GFI and AGFI values are 0.952 and 0.942, respectively, both exceeding the minimum acceptable level of 0.9 for GFI and 0.85 for AGFI, indicating a good absolute fit of the model. Furthermore, the NFI, TLI, and CFI, which are comparative fit indices, all surpass the benchmark of 0.9, with values of 0.949, 0.984, and 0.986, respectively. These high values suggest that the model is a significant improvement over the null model and fits the data very well. Overall, the metrics in Table 7 collectively confirm the structural equation model's robustness and validity, demonstrating that it effectively captures the relationships specified in the theoretical framework of the study.

**Table 7** Model Fit Metrics for Structural Equation Model.

Fit index	$\chi^2/df$	RMSEA	GFI	AGFI	NFI	TLI	CFI
Reference standards	<3	<0.08	>0.9	>0.85	>0.9	>0.9	>0.9
Result	1.362	0.024	0.952	0.942	0.949	0.984	0.986

Table 8 summarizes the results of a structural equation model (SEM) path test, focusing on the relationships between various constructs related to online exercise courses. Each row in the table represents a hypothesis (H1 to H12) about the directional influence of one construct on another, with corresponding path estimates, standardized coefficients ( $\beta$ ), standard errors (S.E.), critical ratios (C.R.), p-values (P), and the results regarding the support for each hypothesis.

Key constructs include Perceived Value (PV), Identity (IO), Service Quality (SQ), Motivation to Purchase (MP), Intention to Purchase (IP), and Behavior of Purchasing (BP) the Online Exercise Course. The results indicate strong support for all twelve hypotheses:

**H1 to H3** explore the impact of PV on BP, MP, and IP, respectively, and all are supported with significant  $\beta$  values and p-values less than 0.001 (denoted by \*\*\*), indicating a strong statistical significance.

**H4 to H6** focus on the influence of IO on BP, MP, and IP. Each of these hypotheses is supported, with p-values suggesting significant relationships.

**H7 to H9** examine the effect of SQ on BP, MP, and IP. Again, all these hypotheses are supported, with high C.R. values and p-values indicating significance.

**H10 to H12** assess the relationships between MP and IP, MP and BP, and IP and BP, respectively. These hypotheses are also supported, with significant p-values.

The consistent support across all hypotheses, alongside significant  $\beta$  values and p-values, demonstrates a robust and well-structured model. This model effectively elucidates the complex interrelationships among factors influencing consumer engagement with online exercise courses, highlighting the critical roles of perceived value, identity, service quality, motivation, intention, and behavior in this context.

**Table 8.** Structural Equation Model Path Test.

Hypothesis	Path	Estimate	$\beta$	S.E.	C.R.	P	Results
H1	PV→BP	0.236	0.242	0.058	4.093	***	Supported
H2	PV→MP	0.174	0.187	0.058	2.987	0.003	Supported
H3	PV→IP	0.241	0.252	0.055	4.406	***	Supported
H4	IO→BP	0.137	0.143	0.047	2.921	0.003	Supported
H5	IO→MP	0.182	0.198	0.049	3.699	***	Supported
H6	IO→IP	0.173	0.183	0.046	3.781	***	Supported
H7	SQ→BP	0.136	0.134	0.058	2.356	0.018	Supported
H8	SQ→MP	0.247	0.254	0.059	4.182	***	Supported
H9	SQ→IP	0.282	0.284	0.056	5.058	***	Supported
H10	MP→IP	0.191	0.186	0.047	4.074	***	Supported
H11	MP→BP	0.186	0.178	0.049	3.812	***	Supported
H12	IP→BP	0.233	0.228	0.062	3.750	***	Supported

**Note:** PV: Perceived Value of Online Exercise Course; IO: Identity of Online Exercise Course; SQ: Service Quality of Online Exercise Course; MP: Motivation to Purchase the Online Exercise Course; IP: Intention to Purchase the Online Exercise Course; BP: Behavior of Purchasing the Online Exercise Course.\*\*\*:  $p < 0.001$



Table 9 showcases the results of a mediation effect bootstrap test conducted in a study focusing on online exercise courses. This table evaluates the mediating roles of specific constructs (Motivation to Purchase - MP, Intention to Purchase - IP) in the relationship between other constructs (Perceived Value - PV, Identity - IO, Service Quality - SQ) and Behavioral outcomes (BP).

**H13** to H22 tests a specific mediation path. The table includes the effect size of the mediation, the standard error (SE), and the 95% Confidence Interval (Bias-Corrected) for each mediation path. The results indicate whether the mediation hypothesis is supported.

**H13** to H15 assess the mediation effect of MP on the relationship between PV, IO, SQ (respectively) and IP. All three hypotheses are supported, with effect sizes ranging from 0.033 to 0.047, and the confidence intervals not including zero.

**H16** to H18 evaluate the mediation effect of MP on the relationship between PV, IO, SQ (respectively) and BP. These hypotheses are also supported, showing a significant indirect effect with confidence intervals excluding zero.

**H19** to H21 test the mediation effect of IP on the relationship between PV, IO, SQ (respectively) and BP. Each of these hypotheses is supported, with the largest effect size observed for SQ→IP→BP (0.066).

**H22** investigates the mediation effect of IP on the relationship between MP and BP, finding support for this pathway as well.

Overall, the table demonstrates significant mediation effects in all proposed pathways, indicating that MP and IP play crucial intermediary roles in influencing the behavior of individuals engaging with online exercise courses. The supported hypotheses highlight the complex interplay between various factors like perceived value, identity, and service quality, and how they influence consumer motivation, intentions, and ultimately, purchasing behavior.

**Table 9** Mediation Effect Bootstrap Test.

Hypothesis	Mediation path	Effect size	SE	Bias-Corrected		Results
				95%CI		
H13	PV→MP→IP	0.033	0.018	0.008	0.082	Supported
H14	IO→MP→IP	0.035	0.016	0.010	0.076	Supported
H15	SQ→MP→IP	0.047	0.022	0.015	0.104	Supported
H16	PV→MP→BP	0.032	0.020	0.005	0.082	Supported
H17	IO→MP→BP	0.034	0.017	0.010	0.080	Supported
H18	SQ→MP→BP	0.046	0.021	0.013	0.102	Supported
H19	PV→IP→BP	0.056	0.027	0.019	0.134	Supported
H20	IO→IP→BP	0.040	0.021	0.010	0.099	Supported
H21	SQ→IP→BP	0.066	0.033	0.013	0.142	Supported
H22	MP→IP→BP	0.044	0.021	0.014	0.104	Supported

Figure 2 uncovers the structural equation model diagram and explains the relationship among perceived value, identity, service quality, motivation, intention, and the behavior of purchasing online exercise courses. By this way, this model identifies the mediation roles of motivation and intention.

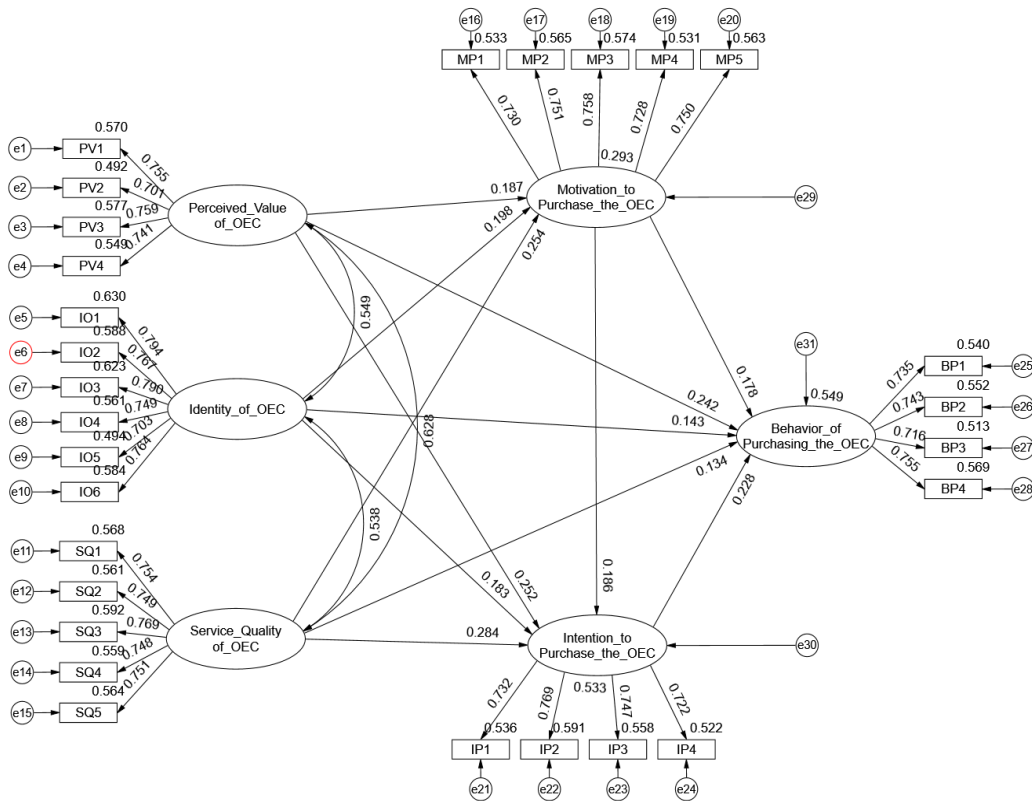


Figure 2. Structural Equation Model Diagram.

### 5. Discussion and Conclusion

The analysis of the structural equation model, as delineated in the presented tables, offers substantial empirical support for the funding allocation towards various aspects of online exercise courses. The significant path coefficients in the model (Table 4-19) indicate that Perceived Value (PV), Identity (IO), and Service Quality (SQ) are pivotal factors influencing Motivation to Purchase (MP), Intention to Purchase (IP), and Behavior of Purchasing (BP) the Online Exercise Course. Specifically, the strong relationships highlighted between SQ and both MP and IP ( $\beta = 0.254$  and  $\beta = 0.284$ , respectively) suggest that investments aimed at enhancing service quality could yield substantial returns in terms of consumer engagement and purchasing behavior. Furthermore, the mediation analysis (Table 9) underscores the critical roles of MP and IP as mediators in the relationships between PV, IO, SQ, and BP. For instance, the significant mediation effects, such as  $SQ \rightarrow MP \rightarrow IP$  (Effect size = 0.047) and  $SQ \rightarrow IP \rightarrow BP$  (Effect size = 0.066), reinforce the importance of these constructs in the consumer decision-making process. This evidence advocates for a strategic focus on improving service quality and strengthening the perceived value and identity of online exercise courses, as these are likely to enhance motivation and intention, ultimately leading to increased consumer purchasing behavior. Therefore, funding directed towards these key areas, particularly in service quality enhancement and marketing strategies that bolster perceived value and identity, is empirically justified and potentially highly beneficial for the growth and success of online exercise course providers.

## 5.1 Theoretical Implications

The research results, when juxtaposed with social identity theory, consumer value theory, and service quality theory, offer intriguing theoretical implications and highlight both convergences and divergences with previous studies.

The positive correlation between Identity of Online Exercise Course (IO) and Behavior of Purchasing (BP) ( $\beta = 0.143$ ) aligns with social identity theory, which posits that individuals derive part of their identity from group memberships (Drury et al., 2019). Similar to findings in Chu and Chen (2019), our study suggests that the stronger the identification with the online exercise community, the more likely individuals are to engage in purchasing behavior. However, this differs from Smith (2015), who found a weaker association in more individualistic exercise settings, underscoring the context-dependent nature of social identity impacts.

The study's findings that Perceived Value (PV) significantly influences Motivation to Purchase (MP), Intention to Purchase (IP), and Behavior of Purchasing (BP) resonate with consumer value theory (Tanrikulu, 2021). This mirrors the observations of Liu et al. (2021), who noted a direct link between perceived value and purchase intentions in online settings. However, our study extends this by demonstrating a significant direct influence on purchasing behavior, a connection less emphasized in earlier works like that of Hosta and Zabkar (2021).

Consistent with service quality theory (Su et al., 2022), our results show a strong link between Service Quality (SQ) and MP, IP, and BP. This finding supports the work of Rita et al. (2019), who identified service quality as a critical predictor of consumer behavior in online environments. However, our study offers a novel insight into the online exercise domain, contrasting with earlier research by Kaya et al. (2019), which did not find as significant a relationship in traditional retail settings, highlighting the unique dynamics of online services.

The mediation effects observed, such as  $SQ \rightarrow MP \rightarrow IP$  and  $SQ \rightarrow IP \rightarrow BP$ , align with the theorizations of Yue et al. (2020) about the indirect effects in consumer behavior models. These findings are in line with those of Xiao et al. (2019), who observed similar mediation effects in online shopping contexts. However, our research offers a new perspective by applying this in the niche of online exercise courses, a domain less explored in previous studies.

In summary, our research corroborates certain aspects of the foundational theories while also providing new insights, particularly in the context of online exercise courses. This nuanced understanding contributes to the literature by emphasizing the context-specific nature of these theoretical frameworks and their application in digital consumer behavior.

## 5.2 Practical Implications

The research findings provide valuable management insights for different stakeholders in the realm of online exercise courses. These insights, grounded in empirical data, offer strategic directions for course providers, marketers, and platform developers.

The strong influence of service quality (SQ) on motivation to purchase (MP), intention to purchase (IP), and behavior of purchasing (BP) underscores the necessity for providers to prioritize high-quality service delivery. This includes not only the content of the courses but also the user interface, customer support, and overall user experience. Similarly, the significant role of perceived value (PV) suggests that providers should focus on enhancing the perceived benefits versus costs of their courses. Strategies could include offering competitive pricing,

showcasing expert instructors, and highlighting unique course features that justify the value proposition.

Marketers should leverage the identity of online exercise course (IO) to build a strong community around the brand. By fostering a sense of belonging and identity among users, marketers can enhance customer loyalty and word-of-mouth promotion. Additionally, emphasizing the perceived value through effective communication strategies that highlight the unique benefits and outcomes of the courses can attract new customers and retain existing ones.

The findings suggest that platform developers should focus on creating user-friendly, aesthetically pleasing, and reliable platforms. The high impact of service quality on consumer behavior indicates that a seamless, engaging, and error-free user experience can significantly influence user satisfaction and purchasing decisions. Features like personalized recommendations, interactive elements, and social sharing capabilities could further enhance user engagement.

Policymakers should consider regulations that ensure the quality and credibility of online exercise courses. This could involve setting industry standards, certifying courses, and implementing consumer protection policies. Ensuring that providers maintain high service quality and accurately represent the value of their courses will protect consumers and promote a healthy market environment.

In conclusion, these insights offer a roadmap for various stakeholders in the online exercise course industry, emphasizing the need for quality service, strong community identity, clear value communication, and user-centric platform design. By addressing these areas, stakeholders can better meet consumer needs and preferences, leading to improved engagement, satisfaction, and business success.

### **5.3 Conclusion**

The research conducted offers an in-depth analysis of factors influencing consumer behavior in the realm of online exercise courses. The study utilized a structural equation model to examine the impact of perceived value (PV), Identity (IO), and service quality (SQ) on motivation to purchase (MP), intention to purchase (IP), and behavior of purchasing (BP). The results indicated that all three constructs significantly influence MP, IP, and BP, with service quality emerging as a particularly strong predictor. Mediation analysis further revealed that MP and IP serve as significant mediators in the relationships between PV, IO, SQ, and BP, underscoring their intermediary roles in the consumer decision-making process.

This research makes several key contributions to the existing body of knowledge. Firstly, it extends the application of consumer value theory, social identity theory, and service quality theory to the context of online exercise courses, a relatively under-explored domain. The findings demonstrate the relevance and applicability of these theories in a digital consumer environment, offering new insights into the dynamics of online consumer behavior. Secondly, the study provides empirical evidence of the significant role of perceived value, identity, and service quality in influencing consumer motivation, intentions, and behavior. This not only validates theoretical postulations but also offers practical implications for course providers, marketers, and platform developers. Thirdly, by highlighting the mediating roles of motivation and intention, the study offers a nuanced understanding of the pathways through which various

factors impact purchasing behavior, thereby enriching the theoretical discourse on consumer behavior in digital settings.

Despite its contributions, the study has certain limitations. It is the reliance on self-reported data, which may be subject to response biases. Additionally, the study's sample may not fully represent the diverse demographics of online exercise course consumers, limiting the generalizability of the findings. The cross-sectional nature of the research also restricts the ability to establish causal relationships and understand the dynamics of consumer behavior over time.

Given these limitations, future research could adopt a longitudinal approach to better capture the evolution of consumer behavior in the context of online exercise courses. Expanding the sample to include a more diverse demographic would enhance the generalizability of the findings. Additionally, incorporating qualitative methods, such as interviews or focus groups, could provide deeper insights into consumer motivations and perceptions. Future studies could also explore the impact of emerging technologies, like virtual reality and artificial intelligence, on consumer engagement and satisfaction in online exercise contexts. Moreover, comparative studies between different types of online exercise platforms could offer a more comprehensive understanding of the competitive landscape and consumer preferences.

In conclusion, this research provides valuable insights into the factors influencing consumer behavior in online exercise courses, with significant theoretical and practical implications. By addressing its limitations and building on its findings, future research can further enrich our understanding of this dynamic and rapidly evolving field.

#### **Data Availability Statement**

The datasets presented in this article are not readily available because they involve the interests of collaborators, as well as some privacy issues, and some data are confidential. However, further individual scholars or experts are welcome to request these datasets for academic references or other needs; requests to access these datasets should be directed to SJ: [jiang.song@rmutr.ac.th](mailto:jiang.song@rmutr.ac.th).

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G.J, J.D and S.J: conceptualization and writing—original draft preparation.

G.J, J.D and S.J: methodology, formal analysis, and writing—review and editing.

All authors have read and agreed to the published version of the manuscript.

#### **Conflict of Interest**

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.

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