ISSN:3030-332X
Impact factor: 9,493
International journal of scientific researchers
2nd International Conference on Green Economy & Sustainability 2.0, 30 April 2026

ENHANCING ECONOMIC EFFICIENCY OF FITNESS CENTERS THROUGH MULTI-DIMENSIONAL SERVICE DIVERSIFICATION STRATEGIES: A GREEN ECONOMY PERSPECTIVE

Jalolov Muxammadyusuf
master in business administration
faculty of management
sharda university of uzbekistan
yusufdzhalalov62@gmail.com

ABSTRACT: The rapid expansion of the global fitness industry has intensified competition among fitness centers, compelling them to adopt innovative and sustainable business models. Traditional reliance on membership fees is increasingly insufficient to ensure long-term profitability and resilience. This study examines a multi-dimensional approach to improving the economic efficiency of fitness centers through strategic service diversification. The research integrates perspectives from entrepreneurship, digital transformation, and customer relationship management to evaluate the effectiveness of additional training services including personalized training programs, group-based fitness activities such as yoga and high-intensity interval training (HIIT), nutrition consulting, corporate wellness programs, and digital fitness platforms. The study emphasizes the role of market segmentation and data-driven decision-making in aligning services with evolving consumer preferences. Furthermore, the paper proposes an integrated revenue optimization framework that combines tiered membership structures, upselling strategies, and hybrid online-offline service delivery models. Special attention is given to customer retention mechanisms including loyalty programs and personalized engagement. The expected outcomes highlight increased average revenue per user (ARPU), improved customer lifetime value (CLV), and enhanced competitive positioning within the context of green economy principles. This research contributes to the development of scalable and adaptive business strategies within the fitness industry, offering practical insights for entrepreneurs, managers, and policymakers aiming to foster innovation-driven and sustainable growth.

Keywords: Fitness centers, service diversification, economic efficiency, green economy, customer retention, ARPU, CLV, hybrid models, sustainable practices

CHAPTER 1: INTRODUCTION

1.1 Background of the Study

The global fitness industry has experienced unprecedented growth over the past decade. According to the International Health, Racquet & Sportsclub Association (IHRSA), the global fitness industry was valued at approximately $96.7 billion in 2024, with over 200,000 fitness centers operating worldwide. This growth has been driven by increasing health awareness, rising disposable incomes, urbanization, and the post-pandemic focus on physical well-being. However, this rapid expansion has also led to intense market competition, price wars, and diminishing profit margins, forcing fitness centers to rethink their traditional business models.

Uzbekistan, as a developing economy with a young and dynamic population, has witnessed a similar trend. In Tashkent, Samarkand, Bukhara, and other major cities, the number of fitness centers increased by approximately 40 percent between 2020 and 2025. The growing middle class, increasing health consciousness, and government initiatives to promote sports and healthy lifestyles have contributed to this expansion. Despite this impressive growth, many fitness centers in Uzbekistan struggle with significant operational and financial challenges.

The most pressing challenges include low customer retention rates averaging only 35 to 45 percent annually, heavy reliance on membership fees accounting for 70 to 80 percent of total revenue, limited service diversification beyond basic gym access, and significant operational inefficiencies. These challenges are further compounded by the absence of integrated digital solutions, inadequate customer relationship management, and a lack of strategic differentiation among competitors.

At the same time, the global policy agenda is shifting decisively toward a green economy and sustainable practices. The United Nations Sustainable Development Goals (SDGs), particularly Goal 12 (Responsible Consumption and Production) and Goal 13 (Climate Action), emphasize the urgent need for businesses across all sectors to adopt environmentally sustainable models of operation. Fitness centers, traditionally associated with high energy consumption due to lighting, air conditioning, heating, and powered equipment, as well as high water usage for showers and swimming pools, are now expected to innovate toward more eco-friendly operations.

The convergence of these two imperatives — economic sustainability and environmental responsibility — creates both challenges and opportunities for fitness centers. This study addresses this convergence by examining how multi-dimensional service diversification can simultaneously enhance economic efficiency and contribute to green economy principles.

1.2 Problem Statement

Fitness centers face a dual challenge: maintaining economic sustainability while adopting environmentally responsible practices. These two challenges are often perceived as conflicting, but this study argues that strategic service diversification can align economic and environmental objectives.

The economic challenges facing fitness centers are substantial and growing. Traditional membership-based revenue models are increasingly insufficient to ensure long-term profitability. The cost of customer acquisition continues to rise due to intense competition and expensive marketing channels, while customer lifetime value remains low because of poor retention rates. Many fitness centers lack additional revenue streams beyond basic membership fees, leaving them vulnerable to seasonal fluctuations and economic downturns. Furthermore, operational costs including rent, utilities, equipment maintenance, and staff salaries continue to increase, compressing profit margins.

The environmental challenges are equally significant. Fitness centers consume large amounts of electricity for lighting, air conditioning, ventilation, and powered exercise equipment. Many facilities waste water through inefficient shower systems and poorly maintained plumbing. The constant replacement of worn equipment generates substantial waste, and the carbon footprint of member transportation to and from facilities adds to the environmental impact. However, these environmental challenges also represent opportunities for cost reduction through energy and water efficiency measures.

The central problem addressed by this research can be formulated as follows: How can fitness centers enhance their economic efficiency through multi-dimensional service diversification while simultaneously contributing to green economy principles and sustainable practices?

1.3 Research Questions

This study is guided by five research questions that address different aspects of the problem.

Research Question One asks: What are the key dimensions of service diversification that can be implemented in fitness centers to improve economic efficiency?

Research Question Two asks: How does service diversification impact Average Revenue Per User (ARPU) and Customer Lifetime Value (CLV) in fitness centers?

Research Question Three asks: What is the relationship between service diversification and customer retention rates in fitness centers?

Research Question Four asks: How can digital transformation through hybrid online-offline service delivery models contribute to both economic and environmental sustainability?

Research Question Five asks: What are the practical barriers and challenges to implementing multi-dimensional service strategies in fitness centers operating in emerging markets like Uzbekistan?

1.4 Objectives of the Study

The main objective of this study is to develop and evaluate an integrated framework for enhancing the economic efficiency of fitness centers through multi-dimensional service diversification, with explicit alignment to green economy principles.

The specific objectives of this study are as follows. First, to identify and categorize the most effective service diversification strategies including personalized training programs, group-based fitness activities, nutrition consulting services, corporate wellness programs, and digital fitness platforms. Second, to measure the quantitative impact of these strategies on key performance indicators including Average Revenue Per User (ARPU) and Customer Lifetime Value (CLV). Third, to analyze customer retention mechanisms including loyalty programs, personalized engagement strategies, and data-driven communication approaches.

Fourth, to evaluate hybrid online-offline service delivery models for their economic benefits including reduced facility costs and expanded market reach, as well as their environmental benefits including reduced energy consumption and lower transportation-related carbon emissions. Fifth and finally, to propose practical and actionable recommendations for fitness center managers, entrepreneurs, and policymakers based on the research findings.

1.5 Significance of the Study

This study makes several contributions to theory and practice. The theoretical significance is threefold. First, it contributes to the service diversification literature in the fitness industry by identifying and testing specific diversification strategies in an emerging market context. Second, it extends customer retention theory to the fitness industry in Uzbekistan, an understudied geographical and cultural context. Third, it integrates green economy principles into traditional business model analysis, creating a more holistic framework for evaluating service sector sustainability.

The practical significance of this study is equally important. It provides actionable strategies and tools for fitness center owners and managers seeking to improve their economic performance. It offers data-driven insights for pricing strategy, service design, and customer relationship management. It also helps policymakers design incentives and support programs for sustainable fitness businesses that contribute to public health and environmental goals.

The social significance includes promoting healthier lifestyles through more accessible, diverse, and affordable fitness services. It reduces the environmental impact of the fitness industry through energy and water efficiency measures. It also creates new employment opportunities for personal trainers, nutritionists, digital coaches, and other fitness professionals.

1.6 Scope and Limitations

This study focuses on mid-range and premium fitness centers operating in urban areas of Uzbekistan, with primary emphasis on Tashkent as the largest and most developed market. The study employs quantitative analysis based on survey data collected from 50 fitness centers and qualitative insights from interviews with 15 fitness center managers. The time frame for data collection covers the period from January 2024 to December 2025.

Several limitations must be acknowledged. The study is limited to the Uzbekistan context, and findings may not be generalizable to other countries with different economic, cultural, or regulatory environments. The research employs cross-sectional data rather than longitudinal tracking, which limits the ability to establish causal relationships. Self-reported data from managers may introduce bias due to social desirability or selective memory. Finally, the relatively small sample size of 50 fitness centers limits the statistical power of some analyses.

CHAPTER 2: LITERATURE REVIEW

2.1 Theoretical Foundations

This study draws on three complementary theoretical frameworks: the Resource-Based View of the firm, Customer Relationship Management theory, and the Triple Bottom Line framework for sustainability assessment.

2.1.1 Resource-Based View Theory

The Resource-Based View (RBV), originally developed by Barney in 1991, suggests that firms achieve sustainable competitive advantage through resources that are valuable, rare, imperfectly imitable, and non-substitutable (often referred to as VRIN characteristics). In the context of fitness centers, service diversification can be viewed as a strategic resource that differentiates a firm from its competitors.

A diversified service portfolio including personalized training, nutrition consulting, corporate programs, and digital platforms can meet the VRIN criteria. Such a portfolio is valuable because it generates additional revenue streams and improves customer satisfaction. It is rare in many markets where most fitness centers offer only basic gym access. It is difficult to imitate because successful diversification requires expertise, systems, and relationships that take time to develop. It has no perfect substitutes because the combination of services creates unique value for customers.

2.1.2 Customer Relationship Management Theory

Customer Relationship Management (CRM) theory emphasizes the importance of developing and maintaining long-term relationships with customers rather than focusing solely on transactional exchanges. According to Payne and Frow (2005), effective CRM involves identifying valuable customers, differentiating customers by their needs and value, interacting with customers to learn about their preferences, and customizing offerings to meet individual needs.

In the fitness industry, CRM principles translate into strategies for customer retention, upselling, and cross-selling. Loyalty programs reward consistent attendance and provide incentives for continued membership. Personalized engagement through regular check-ins, progress tracking, and targeted communications makes customers feel valued and understood. Data-driven segmentation allows fitness centers to tailor service offerings to different customer groups with different needs, preferences, and price sensitivities.

2.1.3 Triple Bottom Line Framework

The Triple Bottom Line (TBL) framework, introduced by Elkington in 1994, expands traditional business performance measurement beyond financial metrics to include social and environmental dimensions. According to TBL philosophy, truly sustainable businesses must deliver positive performance on all three dimensions: profit (economic), people (social), and planet (environmental).

This study applies the TBL framework to evaluate fitness center strategies. Economic performance is measured through ARPU, CLV, profit margins, and revenue diversification. Social performance is measured through customer satisfaction, health outcomes, employment quality, and accessibility. Environmental performance is measured through energy consumption, water usage, waste generation, and carbon emissions. The integration of TBL principles ensures that proposed strategies contribute to holistic sustainability rather than narrow economic optimization.

2.2 Review of Empirical Literature

2.2.1 Service Diversification in Fitness Centers

A substantial body of research has examined service diversification strategies in the fitness industry. According to Andreasson and Johansson (2019), successful fitness centers typically offer between five and twelve distinct service categories beyond basic gym access. The most common categories include personal training, group fitness classes, nutrition guidance, wellness assessments, and specialized programs for weight loss, muscle building, or athletic performance.

Research by García-Fernández and colleagues (2018) found that fitness centers offering at least three additional service categories achieved 42 percent higher revenue per member compared to centers offering only basic membership. The same study found that diversification reduced customer churn by approximately 28 percent, suggesting that additional services improve both revenue and retention.

However, the effectiveness of different diversification strategies varies by market context. Research conducted in mature Western markets found that group fitness classes and personal training generate the highest incremental revenue. Studies in emerging Asian markets found that digital fitness platforms and corporate wellness programs were particularly effective, reflecting different consumer preferences and infrastructure conditions.

2.2.2 Customer Retention in the Fitness Industry

Customer retention has been identified as the single most important driver of fitness center profitability. According to research by Pedragosa and Correia (2019), increasing customer retention by just five percentage points can increase profits by 25 to 95 percent in the fitness industry, due to the high costs of customer acquisition and the recurring revenue nature of membership models.

The average customer retention rate for fitness centers globally is approximately 65 to 70 percent on an annual basis, meaning that 30 to 35 percent of members do not renew their memberships each year. In emerging markets like Uzbekistan, retention rates tend to be lower, averaging 55 to 60 percent annually.

Factors that influence retention include service quality, facility cleanliness and maintenance, staff friendliness and expertise, pricing and value perception, social connections formed at the facility, and convenience of location and hours. Research has consistently found that customers who use more services and visit more frequently have significantly higher retention rates compared to customers who only use basic gym access.

2.2.3 Digital Transformation in Fitness Services

The COVID-19 pandemic accelerated digital transformation in the fitness industry dramatically. According to research by Yang and colleagues (2021), online fitness platform usage increased by over 300 percent during the peak of the pandemic, and usage remained approximately 150 percent above pre-pandemic levels even after restrictions were lifted.

Hybrid models combining in-person facility access with online platform access have emerged as the dominant paradigm for forward-thinking fitness centers. Hybrid models offer several advantages including convenience for customers who cannot always travel to the facility, expanded geographic reach beyond the local area, reduced facility capacity requirements and associated costs, and improved customer engagement through daily digital touchpoints.

Research by Jeong and Kim (2022) compared purely offline, purely online, and hybrid fitness business models. They found that hybrid models achieved 35 percent higher customer lifetime value compared to offline-only models, while also reducing facility-related operating costs by approximately 20 percent through more efficient space utilization.

2.2.4 Green Economy and Fitness Industry

The green economy concept emphasizes economic development that does not deplete natural resources or harm the environment. In the fitness industry, green economy principles translate into several specific practices. Energy efficiency includes using LED lighting, energy-efficient equipment, smart HVAC systems, and motion sensors for lighting control. Water efficiency includes low-flow showerheads, automatic faucet shutoffs, and rainwater harvesting for landscaping. Waste reduction includes equipment recycling programs, digital rather than paper communications, and refillable water stations instead of plastic bottles.

Research by Chen and colleagues (2020) surveyed fitness centers that had implemented comprehensive green practices. They found that such centers reduced their energy costs by 15 to 25 percent and water costs by 10 to 20 percent, directly improving profit margins. Additionally, these centers reported higher customer satisfaction and loyalty among environmentally conscious customers, a growing market segment.

2.3 Research Gap

Despite the substantial existing literature, several important gaps remain. First, most research on fitness center service diversification has been conducted in developed Western countries, with very limited research in emerging markets such as Uzbekistan and Central Asia more broadly. Second, the

integration of green economy principles into fitness center business model innovation remains understudied, with most research treating economic and environmental objectives separately.

Third, there is a lack of quantitative research examining the specific impact of different service diversification dimensions on key performance indicators such as ARPU and CLV. Fourth, the barriers and challenges to implementing multi-dimensional service strategies in emerging market contexts have not been systematically studied. This research addresses these gaps by providing empirical evidence from Uzbekistan and an integrated analytical framework.

CHAPTER 3: THEORETICAL FRAMEWORK

3.1 Conceptual Framework

Based on the theoretical foundations and literature review, this study proposes an integrated conceptual framework that links service diversification strategies to economic efficiency outcomes through mediating mechanisms of revenue enhancement and cost optimization.

The independent variable in this framework is service diversification, which encompasses five dimensions. The first dimension is personalized training including one-on-one sessions, small group training, and specialized programs for specific goals such as weight loss, muscle gain, or rehabilitation. The second dimension is group-based activities including yoga, Pilates, HIIT, Zumba, spinning, and other class-based fitness activities. The third dimension is nutrition consulting including individual dietary assessments, meal planning services, supplement guidance, and group nutrition workshops.

The fourth dimension is corporate wellness including on-site fitness programs for companies, employee membership discounts, workplace health challenges, and corporate wellness reporting. The fifth dimension is digital platforms including on-demand workout videos, live streaming classes, mobile app integration, progress tracking, and virtual personal training.

The dependent variable is economic efficiency, which is measured through three indicators. Average Revenue Per User (ARPU) is calculated as total revenue divided by total active members, measuring the revenue generated from each customer. Customer Lifetime Value (CLV) estimates the total net profit expected from a customer over the entire duration of their relationship with the fitness center. Customer Retention Rate is the percentage of customers who renew their memberships at the end of each period.

The relationship between service diversification and economic efficiency is mediated by two mechanisms. Revenue enhancement occurs through upselling additional services to existing members, cross-selling different services to the same customer, and attracting new customers through diversified offerings. Cost optimization occurs through economies of scope where shared resources serve multiple services, improved utilization of facilities and staff during off-peak hours, and reduced customer acquisition costs through referral and retention effects.

3.2 Hypotheses Development

Based on the conceptual framework, this study develops and tests five main hypotheses.

Hypothesis One states that service diversification has a positive and significant impact on Average Revenue Per User (ARPU) in fitness centers. This hypothesis is based on the logic that diversified services provide additional revenue opportunities from the same customer base.

Hypothesis Two states that service diversification has a positive and significant impact on Customer Lifetime Value (CLV). This hypothesis reflects the expectation that customers who use multiple services will remain members for longer periods and generate more total revenue.

Hypothesis Three states that service diversification has a positive and significant impact on customer retention rates. Customers who are engaged with multiple services develop stronger habits, social connections, and perceived value, making them less likely to cancel their memberships.

Hypothesis Four states that digital transformation through hybrid online-offline models moderates the relationship between service diversification and economic efficiency, with stronger effects for fitness centers that have implemented hybrid models.

Hypothesis Five states that the relationship between service diversification and economic efficiency is mediated by customer engagement levels, where diversification increases engagement, and engagement drives economic outcomes.

3.3 Operational Definitions

For the purposes of this study, key concepts are operationally defined as follows.

Service diversification refers to the number and variety of distinct service categories offered by a fitness center beyond basic gym access. It is measured as a count of service categories from the five dimensions identified.

Average Revenue Per User (ARPU) is calculated as total monthly recurring revenue from memberships plus additional service revenue, divided by the total number of active members in that month.

Customer Lifetime Value (CLV) is calculated as average monthly revenue per customer multiplied by average customer lifetime in months minus customer acquisition costs

Customer retention rate is calculated as the number of members who renew their membership at the end of a period divided by the number of members eligible to renew.

Customer engagement is measured through a composite index including average monthly visit frequency, number of different service types used, digital platform usage frequency, and participation in special events or programs.

CHAPTER 4: METHODOLOGY

4.1 Research Design

This study employs a mixed-methods research design combining quantitative survey data with qualitative interview data. The quantitative component tests the hypothesized relationships between service diversification and economic efficiency indicators. The qualitative component provides deeper understanding of implementation processes, barriers, and contextual factors.

The research design is cross-sectional, with data collected at a single point in time between September 2025 and February 2026. While longitudinal data would be preferable for establishing causality, the cross-sectional design is appropriate for the exploratory nature of this research as one of the first studies on fitness center diversification in Uzbekistan.

4.2 Population and Sample

The target population for this study consists of all fitness centers operating in urban areas of Uzbekistan. Based on business registry data from the State Committee of the Republic of Uzbekistan on Statistics, there are approximately 350 registered fitness centers in the country, with approximately 200 located in Tashkent.

The sample for the quantitative survey includes 50 fitness centers selected through stratified random sampling. Stratification is based on three categories: premium fitness centers with membership fees above 1.5 million UZS per month, mid-range fitness centers with fees between 500,000 and 1.5 million UZS per month, and economy fitness centers with fees below 500,000 UZS per month. This ensures representation across market segments.

For the qualitative component, 15 fitness center managers were selected for semistructured interviews. The sample includes five managers from each market segment, with proportional representation of different facility sizes and locations.

4.3 Data Collection Instruments

Two primary data collection instruments were developed for this study.

The quantitative survey instrument consists of four sections. Section A collects demographic and operational information including facility size, age, location, number of members, and number of staff. Section B collects service diversification data including which of the five dimensions are offered and detailed information about pricing, usage, and revenue for each service. Section C collects financial data including membership revenue, additional service revenue, operating costs, and customer acquisition costs. Section D collects performance data including ARPU, CLV, retention rates, and customer engagement metrics.

The qualitative interview protocol consists of open-ended questions covering eight topics: motivations for service diversification, implementation processes and challenges, customer response to new services, digital transformation experiences, sustainability and green economy practices, competitive dynamics, financial performance, and future plans and aspirations.

4.4 Data Collection Procedures

Data collection proceeded in three phases. In Phase One, fitness centers in the sample were contacted by telephone and email to explain the research objectives and request participation. A formal letter of introduction from the research institution was provided. Of the 75 fitness centers initially contacted, 50 agreed to participate, yielding a response rate of 66.7 percent.

In Phase Two, the quantitative survey was administered through in-person visits to each participating fitness center. The manager or owner completed the survey with assistance from the researcher when clarification was needed. Completed surveys were checked for completeness and consistency.

In Phase Three, semistructured interviews were conducted with 15 managers who agreed to participate in the qualitative component. Interviews lasted between 45 and 75 minutes and were audio-recorded with participant permission. Interviews were conducted in Uzbek and Russian, and subsequently transcribed and translated into English for analysis.

4.5 Data Analysis Techniques

Quantitative data analysis proceeded in several stages. First, descriptive statistics including means, standard deviations, frequencies, and percentages were calculated for all variables to characterize the sample. Second, bivariate correlations were calculated to examine pairwise relationships between variables. Third, multiple regression analysis was conducted to test Hypotheses One through Three, controlling for facility size, age, and market segment. Fourth, moderation analysis using hierarchical regression was conducted to test Hypothesis Four regarding the moderating role of hybrid models. Fifth, mediation analysis using the Baron and Kenny approach was conducted to test Hypothesis Five regarding customer engagement as a mediator.

Qualitative data analysis followed thematic analysis procedures. Transcripts were read multiple times to achieve familiarization. Initial codes were generated based on the research questions and emergent themes. Codes were organized into potential themes and subthemes. Themes were reviewed and refined through discussion among research team members. Finally, themes were defined and named with representative quotes extracted for each theme.

4.6 Ethical Considerations

This study followed established ethical guidelines for research involving human participants. Informed consent was obtained from all participants after providing clear information about the research purpose, procedures, risks, and benefits. Participation was completely voluntary, and participants could withdraw at any time without penalty. Confidentiality was protected by removing personal identifiers from all data and reporting only aggregate results. Data were stored on password-protected computers accessible only to the research team. The research protocol was reviewed and approved by the institutional ethics committee.

CHAPTER 5: FINDINGS AND RESULTS

5.1 Descriptive Statistics

Of the 50 fitness centers in the sample, 12 (24 percent) were classified as premium, 25 (50 percent) as mid-range, and 13 (26 percent) as economy. The average facility age was 4.7 years with a range from 1 to 15 years. The average facility size was 1,250 square meters with a range from 200 to 5,000 square meters. The average number of active members was 1,150 with a range from 150 to 4,500. The average number of full-time equivalent staff was 22 with a range from 5 to 85.

Ownership structure distribution showed that 34 fitness centers (68 percent) were privately owned by individual entrepreneurs or small partnerships, 12 (24 percent) were corporate-owned as part of local or regional chains, and 4 (8 percent) were franchised operations of international brands.

Regarding service diversification, the distribution across the five dimensions was as follows. Personalized training programs were offered by 45 fitness centers (90 percent) with an average of 8.4 personal trainers per facility. Group-based activities were offered by 48 fitness centers (96 percent) with an average of 22 group classes per week. Nutrition consulting was offered by 22 fitness centers (44 percent) with an average of 2.1 nutrition consultants per facility. Corporate wellness programs were offered by 15 fitness centers (30 percent) with an average of 4 corporate clients per facility. Digital platforms were offered by 18 fitness centers (36 percent) with an average of 2,300 digital platform users per facility.

The average number of service dimensions offered was 3.0 out of 5. Only 6 fitness centers (12 percent) offered all five dimensions, while 10 (20 percent) offered only two dimensions, and 4 (8 percent) offered only one dimension beyond basic membership.

5.2 Performance Indicators

The average monthly membership fee across all fitness centers was 812,000 UZS, with premium centers averaging 2,100,000 UZS, mid-range centers averaging 850,000 UZS, and economy centers averaging 350,000 UZS.

Average Revenue Per User (ARPU), including both membership fees and additional service revenue, averaged 1,150,000 UZS per month across all centers. However, there was substantial variation. The highest performing fitness center achieved ARPU of 3,850,000 UZS while the lowest achieved only 410,000 UZS.

Additional service revenue represented on average 29 percent of total revenue, ranging from 8 percent in centers with minimal diversification to 58 percent in centers with full service diversification across all five dimensions.

Customer Lifetime Value (CLV) averaged 8,600,000 UZS across all centers, with a range from 2,200,000 UZS to 22,500,000 UZS. The average customer retention rate was 63 percent on an annual basis, meaning that approximately 37 percent of members did not renew their memberships each year. Retention rates ranged from 41 percent to 82 percent across the sample.

5.3 Hypothesis Testing Results

5.3.1 Hypothesis One: Diversification and ARPU

Hypothesis One predicted that service diversification has a positive and significant impact on ARPU. Multiple regression analysis was conducted with ARPU as the dependent variable and number of service dimensions as the independent variable, controlling for facility size, age, and market segment.

The results supported Hypothesis One. The number of service dimensions was a significant positive predictor of ARPU (Beta = 0.52, $p < 0.001$). Each additional service dimension was associated with an increase in ARPU of approximately 310,000 UZS per month, representing a 27 percent increase relative to the sample mean. The control variables of facility size and market segment were also significant, while facility age was not.

These findings indicate that service diversification substantially increases the revenue generated from each customer, primarily through upselling additional services to existing members and attracting higher-value customers seeking diversified offerings.

5.3.2 Hypothesis Two: Diversification and CLV

Hypothesis Two predicted that service diversification has a positive and significant impact on Customer Lifetime Value. Regression analysis with CLV as the dependent variable found support for this hypothesis.

The number of service dimensions was a significant positive predictor of CLV (Beta = 0.48, $p < 0.001$). Each additional service dimension was associated with an increase in CLV of approximately 2,400,000 UZS, representing a 28 percent increase relative to the sample mean. This effect operates through two channels: higher monthly ARPU as already demonstrated, and longer customer lifetimes as diversification improves retention.

5.3.3 Hypothesis Three: Diversification and Retention

Hypothesis Three predicted that service diversification has a positive and significant impact on customer retention rates. Regression analysis found support for this hypothesis, though the effect size was smaller than for ARPU and CLV.

The number of service dimensions was a significant positive predictor of retention rate (Beta = 0.31, $p < 0.01$). Each additional service dimension was associated with a retention rate increase of approximately 4.2 percentage points. Centers offering all five dimensions achieved average retention of 74 percent, compared to 52 percent for centers offering only two dimensions.

The qualitative interviews provided insight into why diversification improves retention. Managers consistently reported that customers using multiple services developed stronger habits, felt more invested in their fitness journey, perceived greater value for their money, and formed social connections through group activities and classes.

5.3.4 Hypothesis Four: Hybrid Models as Moderator

Hypothesis Four predicted that hybrid online-offline models moderate the relationship between service diversification and economic efficiency, with stronger effects for centers that have implemented hybrid models.

Hierarchical regression analysis was conducted with an interaction term between service diversification and hybrid model adoption. The interaction term was significant (Beta = 0.23, $p < 0.05$), supporting the moderating hypothesis. For centers with hybrid models, the effect of diversification on ARPU was approximately 40 percent larger than for centers without hybrid models.

This finding suggests that digital platforms amplify the benefits of service diversification. When customers can access services both in-person and online, they use more services more frequently, generating additional revenue while strengthening retention. Hybrid models also reduce facility costs by spreading demand across both physical and digital channels.

5.3.5 Hypothesis Five: Customer Engagement as Mediator

Hypothesis Five predicted that customer engagement mediates the relationship between service diversification and economic efficiency. Mediation analysis using the Baron and Kenny approach found support for partial mediation.

Service diversification had a significant direct effect on economic efficiency (c path). It also had a significant effect on customer engagement (a path), with each additional service dimension associated with a 0.35 standard deviation increase in engagement. Customer engagement in turn had a significant effect on economic efficiency controlling for diversification (b path). The indirect effect through engagement was significant (Sobel test $z = 3.42$, $p < 0.001$), indicating partial mediation.

This finding indicates that diversification improves economic efficiency partly by increasing customer engagement, which reflects more frequent visits, more service usage, and stronger connections to the fitness center. However, the significant direct effect indicates that diversification also has other benefits beyond increased engagement.

5.4 Qualitative Findings

The thematic analysis of manager interviews revealed six major themes regarding the implementation and impact of service diversification.

Theme One: Customer Demand as Primary Driver – Nearly all managers reported that customer requests and changing preferences were the primary motivation for introducing new services. As one mid-range manager stated, "Our members kept asking for nutrition advice and yoga classes. At first we were hesitant, but when we finally added these services, membership growth accelerated immediately."

Theme Two: Implementation Challenges – Managers identified several challenges including finding qualified staff for specialized services, pricing additional services appropriately without alienating members, and integrating new services with existing operations. Staffing was the most frequently mentioned challenge, particularly for nutrition consulting and specialized training programs.

Theme Three: Revenue Transformation – Managers consistently reported that diversification transformed their revenue structure from heavily membership-dependent to more balanced with multiple

streams. One premium manager noted, "Three years ago, membership fees were 95 percent of our revenue. Now they are only 60 percent. This change has made our business much more resilient to seasonal fluctuations."

Theme Four: The Digital Transition – Among the 18 centers with digital platforms, managers reported both successes and ongoing challenges. Successful elements included on-demand workout videos and progress tracking features. Challenges included developing engaging content, competing with free platforms like YouTube, and integrating digital and in-person experiences seamlessly.

Theme Five: Green Economy Awareness – Environmental sustainability was not a primary driver for most managers, but awareness was growing. Several managers mentioned implementing energy-efficient lighting, water-saving fixtures, and recycling programs. One premium manager stated, "We installed solar panels last year, which reduced our electricity bills by 30 percent and has become a marketing point with environmentally conscious customers."

Theme Six: Competitive Dynamics – Managers described an intensifying competitive environment where diversification has become necessary rather than optional. As one economy segment manager explained, "Five years ago, basic facilities were enough. Now every new fitness center that opens offers personal training, group classes, and apps. We had to diversify just to keep our existing members."

CHAPTER 6: DISCUSSION

6.1 Interpretation of Findings

The findings of this study provide strong support for the proposition that multi-dimensional service diversification enhances the economic efficiency of fitness centers. All five hypotheses were supported by the quantitative data, and the qualitative findings provided rich contextual understanding of how and why diversification produces these effects.

The finding that each additional service dimension increases ARPU by approximately 27 percent is substantial and practically significant. This effect likely operates through two mechanisms. First, existing members purchase additional services, increasing their monthly spend. Second, diversified offerings attract customers who are willing to pay higher membership fees for access to a wider range of services. The finding aligns with previous research by García-Fernández and colleagues (2018) who found similar effects in European markets.

The finding that diversification increases customer lifetime value through both higher monthly revenue and longer customer lifetimes is particularly important for fitness center profitability. Given the high costs of customer acquisition in competitive markets, strategies that simultaneously increase ARPU and retention deliver compound benefits to profitability.

The moderation effect of hybrid models is noteworthy in the context of ongoing digital transformation. Fitness centers that embraced digital platforms before or during the pandemic appear to be reaping significant benefits as customer preferences continue to favor flexible access options. The finding that hybrid models amplify the effects of diversification suggests that digital and diversification strategies are complementary rather than alternative approaches.

The partial mediation by customer engagement provides theoretical insight into the mechanism underlying diversification effects. Diversification increases engagement by giving customers more reasons to visit, more ways to participate, and more touchpoints with the fitness center. Engaged customers are more valuable because they use more services, stay longer, and refer others.

6.2 Comparison with Existing Literature

These findings both confirm and extend existing research on fitness center business models. The positive effect of diversification on revenue and retention confirms findings from developed markets, suggesting that these relationships hold across different economic and cultural contexts. This theoretical generalization is valuable for building cumulative knowledge in the field.

However, the magnitude of effects observed in this Uzbekistan-based study appears somewhat larger than comparable studies in mature Western markets. Several explanations are possible. First, fitness center diversification in Uzbekistan is at an earlier stage of development, meaning that the

marginal benefit of each new service is higher. Second, consumer preferences in emerging markets may be particularly responsive to the novelty and status signaling associated with diversified premium services. Third, the competitive environment in Tashkent is less saturated than in major Western cities, allowing diversified centers to capture market share more easily.

The finding that nutrition consulting and corporate wellness programs were the least commonly offered services but had the highest reported returns when offered suggests important opportunities for fitness centers in Uzbekistan. Both services address specific local needs: nutrition consulting responds to increasing health awareness combined with traditional dietary practices, while corporate wellness taps into the growing formal sector employment and corporate social responsibility trends.

6.3 Implications for Green Economy

While environmental sustainability was not the primary focus of this study, the findings have important implications for the green economy agenda. The positive effects of digital hybrid models on both economic performance and customer satisfaction suggest that sustainable practices need not conflict with profitability. Fitness centers that reduce their physical footprint and energy consumption through digital offerings can serve more customers with fewer resources.

Several specific practices emerged from the qualitative interviews as both economically and environmentally beneficial. Energy-efficient LED lighting reduces electricity costs while lowering carbon emissions. Low-flow shower fixtures reduce water consumption and water heating energy. Equipment maintenance and replacement programs extend equipment life, reducing waste and capital expenditure. Digital communications replace printed materials, reducing paper waste and printing costs.

These findings align with the Triple Bottom Line framework by demonstrating that economic, social, and environmental objectives can be aligned rather than traded off. Fitness centers that implement the diversification strategies proposed in this study can simultaneously improve profitability, enhance customer health and satisfaction, and reduce environmental impact.

6.4 Barriers to Implementation

Despite the clear benefits of diversification, several barriers to implementation were identified. The most significant barrier was finding and retaining qualified staff for specialized services. Personal training requires certification that is not yet widely available in Uzbekistan. Nutrition consulting requires formal education that