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# Examining Fitness Centre Members' Perceived Risk, Attitude, and Behavioural Intentions in the Context of Brand Equity during the COVID-19 Pandemic

***Beyza GÜLTEKİN*** *(https://orcid.org/0000-0002-6797-864X), Hacettepe University, Türkiye; beyza@hacettepe.edu.tr*

***Kadir YAĞIZ*** *(https://orcid.org/0000-0002-6465-9678), Iğdır University, Türkiye; kadiryagiz@hotmail.co.uk*

***Leyla ŞENTÜRK-ÖZER*** *(https://orcid.org/0000-0002-8586-0207), Hacettepe University, Türkiye; leyla@hacettepe.edu.tr*

# COVID-19 Pandemisi Döneminde Fitness Merkezi Üyelerinin Algılanan Risk, Tutum ve Davranışsal Niyetlerinin Marka Denkliği Bağlamında İncelenmesi

## Abstract

This study examines the mediating role of fitness centre members' attitudes between perceived risk-behavioural intention and the moderating role of brand equity in the linkage between "perceived risk-behavioural intention" and "perceived risk-attitude-behavioural intention.". Data was collected from 280 fitness club members in Ankara, Türkiye. Proposed hypotheses are tested through PROCESS analyses. The analyses demonstrated support for the hypotheses. Amidst the COVID-19 pandemic, a noticeable decrease in fitness centre memberships is attributed to perceived risks. In this context, this research contributes to the fitness centre literature by exploring the role of brand equity and providing insights for managers.

**Keywords** : Perceived Risk, Brand Equity, Attitude, Behavioural Intention, Fitness Centres.

**JEL Classification Codes** : M10, M19, M30, M31.

## Öz

Bu çalışma, fitness merkezi üyelerinin tutumlarının algılanan risk-davranışsal niyet arasındaki aracılık rolünü ve marka denkliğinin "algılanan risk-davranışsal niyet" ile "algılanan risk-tutum-davranışsal niyet" arasındaki düzenleyicilik rolünü incelemeyi amaçlamaktadır. Veriler, Ankara (Türkiye)' daki fitness merkezine üye olan 280 kişiden toplanmıştır. Önerilen hipotezler, PROCESS analizi aracılığıyla test edilmiştir. Analizler sonucu hipotezler desteklenmektedir. COVID-19 pandemisinde, fitness merkezi üyeliklerinde belirgin bir azalma olması, algılanan riske bağlanmaktadır. Bu bağlamda, bu araştırma, marka denkliğinin rolünü araştırarak fitness merkezi literatürüne katkıda bulunmakta ve yöneticiler için içgörü sunmaktadır.

**Anahtar Sözcükler** : Algılanan Risk, Marka Denkliği, Tutum, Davranışsal Niyet, Fitness Merkezleri.

## 1. Introduction

Following the World Health Organization's declaration of COVID-19 as a pandemic on March 11, 2020 (World Health Organization, 2020), fitness centres were among the first businesses to close. Governments worldwide imposed stringent restrictions on citizens and businesses in various industries, including fitness centres, to protect their communities during the pandemic. During the initial lockdown in most countries (e.g., France, Germany, Italy, China, Japan, and Türkiye), fitness centres and sports clubs were required to close to help slow the spread of the virus.

The conditions for fitness centres during the COVID-19 pandemic have been constantly evolving, and the particular limits and regulations in effect may differ by area and local public health conditions. In some instances, these facilities were forced to be shut down, while in others, they were permitted to remain operational with capacity restrictions or other safety measures. For example, in April 2020, fitness centres and sports clubs were allowed to reopen with capacity limits and other safety measures in place, including the requirement to maintain a distance of at least 2 meters between individuals and to limit the number of people in the facilities (Republic of Turkiye Ministry of Health, 2020). As lockdowns were lifted and limitations were loosened in some regions, some fitness centres and sports clubs were permitted to reopen, frequently with capacity restrictions and other safety precautions in place. For example, 90% of fitness centres have reopened, although many ran at reduced capacity in the United Kingdom (Leisure Database, 2020).

ClubIntel polled 2,000 American gym members and found that 54% of respondents had frozen or cancelled their memberships (Davalos, 2021). Even though more than 87% of gyms in the United States reopened in September, 60% of their members didn't return, and 20% quit exercising completely (Davalos, 2021). 75% of consumers surveyed stated that they would return to their pre-pandemic or everyday routines and physical gyms after the pandemic passed, but many also said they would keep using virtual fitness programs (Davalos, 2021). The 2021 IHRSA Global Report reveal that fitness centres lost about $20.4 billion in 2020 compared to the previous year due to the closures and restricted capabilities amid the pandemic in the United States (Kufahl, 2021).

After removing restrictions on fitness centres, whether the members are ready to go to a fitness centre became an unanswered question for the fitness centres. During the COVID-19 pandemic, consumers may perceive several risks when using fitness centres. Consumers may be concerned about contracting the virus while using shared equipment or participating in group fitness classes. Consumers may be concerned about the cleanliness of equipment and facilities, especially if the facility is not enforcing proper cleaning and sanitation measures. Besides these concerns, many fitness centres and sports clubs require long-term contracts or membership fees. Consumers may hesitate to commit to these financial obligations if they are unsure about their ability to use the facilities due to pandemic-related restrictions or closures. In this context, fitness clubs must address the perceived risks to ensure the members' attitudes and behavioural intentions during the

COVID-19 pandemic. The perceived risks associated with the fitness centres will likely alter consumers' attitudes toward sports and fitness services, impacting behavioural intentions. Fitness centres that have reopened within the confines of the restrictions are looking for novel ways to avoid membership declines and protect their customers. The success of fitness centres is dependent on the reduction of associated risks and the enhancement of attitudes toward fitness centres.

Some studies examine the influence of risk perceptions in hospitality (Braje et al., 2022; Kim et al., 2021), retailing (i.e., stores that use the Face Recognition payment method) (Zahira & Kurniawati, 2022), restaurant (Wei et al., 2022), food [i.e., street food (Laohaviraphap & Wetchasart, 2021), locally produced food (Palau-Saumell et al., 2021)], skincare products (Dewi, 2022) industry during COVID-19 pandemic.

Although there are limited studies concerning perceived risk during the COVID-19 pandemic in terms of exercising and or sports in the literature, these studies consider safer sports environments (e.g. hiking) (Wu et al., 2022); outdoor activities in urban parks (Khozaei et al., 2021). Therefore, consumers' perceived risk and dimensions of perceived risk (e.g., physical, time, psychological, social, financial, and performance) during the COVID-19 pandemic are scarce research areas in the sports industry, especially in the fitness centre context.

Companies consistently strive to reduce consumers' perception of risk and mitigate risk by enhancing brand equity (Kirchoff et al., 2019: 144). Strong brand equity might also help to regulate perceived risk and its impact on profitability, sales revenue (Rambocas et al., 2018: 20), other variables such as customer purchase intention (Wang, 2015), attitude (Kirchoff et al., 2019: 139) and their willingness to pay price premiums (Rambocas et al., 2018: 20) by building positive associations with the firm. Brand equity is crucial to attracting and retaining customers in a competitive market like fitness centres. Based on these, brand equity of fitness centres would help members overcome the negative impact of perceived risk towards fitness centres. There are studies on the negative impact of perceived risk on brand equity (Chen & Chang, 2012: 1157; Kirchoff et al., 2019: 144) as well as the reciprocal influence of brand equity on perceived risk (Washington, 2015: 213; Wang, 2015: 558). However, the interaction impact of brand equity with perceived risk is a scarce area of research.

In this context, this study contributes to the literature on sports marketing by shedding light on the effect of brand equity on perceived risk with its relation to the behavioural intention (through attitude) of fitness club members. In this context, brand equity might mitigate the impacts of perceived risk on attitude, which in turn might increase behavioural intentions. Brand equity, one of a company's most valuable intangible assets, is more than a product's name; it is the symbolic meaning brands strive to convey, giving the company a competitive advantage (Vo Minh et al., 2022).

Consequently, this study aims to examine whether the perceived risk influences the formation of attitudes, which in turn influences behavioural intentions, and expand this mediation model considering the role of brand equity in the context of the COVID-19 pandemic and fitness centres. Perceived risks concerning the fitness centres and their impact on attitudes and behavioural intention in the context of brand equity would open sight for the managers of the fitness centres.

## 2. Conceptual Framework and Hypotheses Development

### 2.1. Mediator Role of Attitude: Perceived Risk-Attitude-Behavioural Intention Linkage

The concept of perceived risk in customer behaviour, originally used by Bauer (1960 c.f. Choi et al., 2013), results from uncertainty and the emergence of negative ramifications of purchase or non-purchase (Ha, 2002). Stone and Mason (1995) utilise risk as the perceived certainty of a behaviour's associated losses. In addition, a person's level of fear regarding the results of participating in a particular activity is referred to as their perceived risk (Wang et al., 2022). This study adapts the risk classification of Stone & Grønhaug (1993) by considering financial, time, performance, social, psychological and physical risk. Perceived risk can also be an important antecedent in attitudes and behavioural intention in the context of fitness centres.

Attitude is the learned propensity to evaluate a particular object or issue as "good-bad, harmful-beneficial, pleasant-unpleasant, and likeable-dislikeable" (Ajzen, 2001: 28). In other words, attitude is an individual's evaluation of an object, idea, or issue that is generally positive or negative. Accordingly, the risk is a loss-based concept, whereas the attitude includes both the gains and losses related to an outcome (Stone & Mason, 1995: 150). In their seminal article, stone and Mason (1995) found that situation-specific risks predict attitude in the context of a personal computer purchase. Accordingly, when consumers perceive a high risk associated with a product, they are more likely to have a negative attitude towards it. On the other hand, when perceived risk is low, consumers are more likely to have a positive attitude towards the product. For example, when consumers perceive a high level of risk, they may be more sceptical or cautious about the product, which can lead to a negative attitude. In contrast, when consumers perceive a low level of risk, they may be more confident in the product and have a more positive attitude towards it.

In their meta-analysis, Kim and Hunter (1993) found that attitude affects behaviour via its impact on behavioural intentions. Accordingly, attitude is a strong predictor of behavioural intention. Oliver (2010:23) defines intentions as a stated likelihood of engaging in a behaviour. Behavioural intention refers to "the subject's indication of his or her intention or willingness to engage in various behaviours concerning a given person or object" (Kim & Hunter, 1993: 332). For example, if a child has a favourable attitude toward physical activity, he or she is more likely to intend to engage in physical activity (Lee et al., 2020).

Consumers' perceived risk reduces their intention to purchase via the Internet (Kim et al., 2008). The perceived risk of COVID-19 was found to have a significant effect on post-traumatic stress disorder, which in turn negatively influences guests' revisit intention of hotel services such as guest rooms, restaurants, spas, and fitness clubs (Yu et al., 2021). Nagar (2020) found that perceptions of risk and benefit influence attitudes toward gym supplements. Perceived risk also negatively impacts the intention to purchase gym supplements. Moreover, attitude mediates the relationship between risk perception and purchase intention (Nagar, 2020). The attitude was a mediator between affective risk perception and behavioural intention in the intact tourism sector in South Korea (Bae & Chang, 2021). Similarly, belief in the positive outcomes of an action increases the likelihood that the individual will develop a positive attitude toward the action, which in turn raises the probability that the individual will conduct the activity (Wang et al., 2022). In contrast, it could be concluded that when the perceived risk is high in COVID-19, an individual's attitude toward the fitness centre would decrease, lowering the likelihood that the individual would revisit it. Therefore, we expect individuals who perceive a high risk associated with fitness centres to be less likely to have a positive attitude towards these facilities and, as a result, are less likely to engage in the behaviour of joining and using these facilities. On the other hand, individuals who perceive a low level of risk are more likely to have a positive attitude and are more likely to engage in the behaviour of joining and using these facilities. Perceived risk will negatively relate to attitude, subsequently decreasing behavioural intention. Consequently, the following hypothesis is formed.

***H1***. *Attitude mediates the relationship between perceived risk and behavioural intention.*

### 2.2. Moderating Role of Brand Equity

When consumers perceive a low level of risk, their attitudes toward fitness centres and the likelihood of revisiting them improve. This relationship can be strengthened through various strategies, such as providing detailed product information, offering money-back guarantees, and building trust (Kaur & Arora, 2020). Besides, brand equity might serve as a moderating element in these relationships. Keller (1993: 2) defines customer-based brand equity as "the differential effect of brand knowledge on consumer response to the brand's marketing." According to the definition of brand equity (Keller, 1993), consumers have a more positive (negative) response to the marketing mix elements of the brand than they do to the same marketing mix element when attributed to a fictitious named or unnamed version of the product, it means the brand has positive (negative) customer-based brand equity.

Brand equity serves as a moderating variable in various relationships. For instance, when it comes to increasing the effect of service recovery satisfaction on behaviour intentions (repatronage intentions and word-of-mouth behaviour), strong brand equity provides an overall advantage over weak brand equity (Huang, 2011). Moreover, brand equity moderates the positive relationship between service quality and customer loyalty (Hur & Kim, 2020). Brand equity mediates between co-creating service recovery with customers and outcome-favourable relationships (Hazée et al., 2017). Although Hazée et al. (2017)

found that co-creating a service recovery makes customers think they got the best solution for the service failure, affecting satisfaction and repurchase plans, low-brand equity companies should co-create service recovery, not ones with high brand equity (Hazée et al., 2017). Restaurants with weak brand equity are more subject to the effects of electronic word of mouth (eWOM) on their financial performance than those with high brand equity (Wang et al., 2021).

Credible signals, such as brands, have been effective indicators of product quality and credibility, mitigating perceived risks and uncertainty (Wang et al., 2022). Accordingly, the low perceived risk might result in high intention to visit fitness centres via their attitudes being favourable due to increased brand equity. Brand equity's high or low might change the strength of the negative impact of perceived risk on behavioural intentions via attitudes.

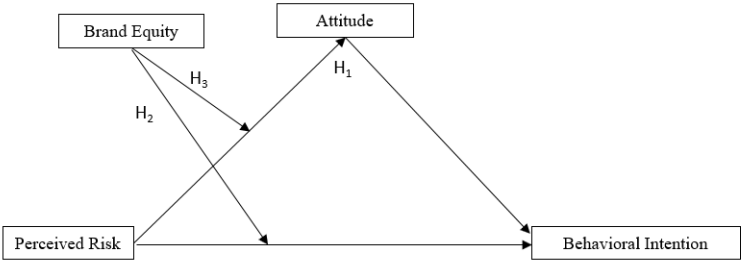
In this context, this study aims to investigate whether or not the perception of risk reveals similar consequences in terms of attitude and behavioural intentions when brand equity is considered. Overall, fitness centres' managers can use brand equity to reduce the impact of their members' perceived risk on revisit intentions through their attitudes. Therefore, it might be concluded that the negative impact of perceived risk on attitude is stronger among low-equity brands than among high-equity brands. Accordingly, the following hypotheses are proposed:

***H2**. Brand equity moderates the direct relationship between perceived risk and behavioural intention.*

***H3**. Brand equity moderates the relationship between perceived risk and behavioural intention via attitude.*

The proposed model of this study is given in Figure 1.

**Figure: 1**
**Proposed Model**



## 3. Data and Methodology

### 3.1. Sampling

Data was collected from November 2020 to February 2021. All participants selected the option for voluntary participation after receiving an informed consent document describing the purpose of the research, the anonymity and confidentiality of data usage, and the participant's ability to opt out of the research at any time without any responsibility. Using the convenience sampling method, the data was gathered online from 280 participants aged 18 to 73 who were members of any fitness club in Ankara, Türkiye. The recommended sample size for confirmatory factor analysis (CFA) is between 100 and 200 questionnaires (Hair et al., 2010); the sample size is acceptable for analyses. Table 1 provides details regarding the demographic characteristics of the participants.

**Table: 1**
**Demographic Characteristics of the Sample**

| Demographic Variables | n | % | Demographic Variables | n | % |
|---|---|---|---|---|---|
| *Gender* | | | *Education* | | |
| Men | 175 | 62.5 | Elementary school | 2 | .07 |
| Woman | 105 | 37.5 | High school | 57 | 20.4 |
| Total | 280 | 100 | University | 159 | 56.8 |
| | | | Graduate | 62 | 22.1 |
| | | | Total | 280 | 100 |
| *Membership term* | | | *Income* | | |
| 1-6 month | 107 | 38.2 | Very low | 12 | 4.3 |
| 7-12 months | 100 | 35.7 | Low | 22 | 7.9 |
| 13-24 months | 31 | 11.1 | Average | 197 | 70.4 |
| 25-36 months | 18 | 6.4 | High | 45 | 16.1 |
| 37-240 months | 24 | 8.6 | Very high | 4 | 1.4 |
| Total | 280 | 100 | Total | 280 | 100 |

### 3.2. Measures

The questionnaire was designed to gather data about consumers' perceived risks, attitudes, overall brand equity, behavioural intention toward their fitness club during COVID-19, and demographic variables with multiple choice and open-ended questions. A five-point Likert-type scale was used for measuring dependent and independent variables, with one indicating "strongly disagree" and 5 "strongly agree". All the scales used in the present study were translated from English into Turkish with back-translation to ensure language equivalence. Perceived risks were measured by using the Stone & Grønhaug (1993) scale. The scale consists of 6 sub-dimensions: physical risk (3 items), time risk (4 items), psychological risk (3 items), social risk (3 items), financial risk (4 items), and performance risk (3 items). Attitude (4 items) was measured using the scale of Cheng, Lam, & Yeung (2006), and brand equity (4 items) was measured using Yoo and Donthu's (2001) scale. Finally, behavioural intention (3 items) was measured using the Venkatesh, Brown, Maruping, and Bala scale.

### 3.3. Preliminary Analysis

The data were initially examined for missing values and the distribution of variables. There were no missing values, and all the skewness and kurtosis values for both measurement models (perceived risks as an independent variable model and overall brand equity, attitude and behavioural intentions as a dependent variable model) were found to be less than 3.29 in absolute terms (Tabachnick & Fidell, 1996) which indicated that the data were normally distributed. Next, confirmatory factor analyses evaluated each item's hypothesised factor number and contribution to the assessed latent construct. Regarding the five-factor perceived risks measurement model, two items from financial risk and one from time risk were dropped, respectively, as they strongly correlated with items other than their factors and items measuring the same factor. A high correlation (.859) between social and psychological risk dimensions also indicated a multicollinearity problem. Thus, social and psychological risks were combined as in the previous research (e.g. Carroll et al., 2014; Qi et al., 2009), and socio-psychological risk was named in this study. After this arrangement, one item from psycho-social risk dropped due to its being strongly correlated with items other than their factors and items measuring the same factor. Finally, the revised four-factor measurement model demonstrated a good fit ($\chi 2$ = 244.191, $df$ = .94; $p$ <.001; $\chi 2/df$ = 2.598; SRMR = .036; GFI = .901, TLI = .953, NFI = .942, and CFI = .963; RMSEA = .076). The dependent variable measurement model, which included overall brand equity, attitude, and behavioural intentions, also demonstrated a good fit ($\chi 2$ = 101.960, $df$ = .41; $p$ <.001; $\chi 2/df$ = 2.487; SRMR = .040; GFI = .936, TLI = .967, NFI = .959, and CFI = .975; RMSEA = .073).

All item loadings for both measurement models were significant (p < .001) and above .50 (Hair et al., 2010), ranging from .711 to .974, as depicted in Appendix 1. The average variance extracted and composite reliability were, respectively, above .50 and .70 (Fornell & Larcker, 1981; Nunnally, 1978), which indicated convergent validity and reliability of the constructs. In addition, the discriminant validity was supported by the fact that all square roots of AVE values were greater than the correlations between constructs (Fornell & Larcker, 1981), as given in Tables 2 and 3, bold and diagonal. The means, standard deviations, correlations between the factors, and the AVE and CR scores are also presented in Tables 2 and 3.

**Table: 2**
**Means, Standard Deviations, Correlations, Average Variance Extracted and Composite Reliability of the Variables**

| Variables | **Mean** | **S.D.** | **1** | **2** | **3** | **AVE** | **CR** |
|---|---|---|---|---|---|---|---|
| 1. Perceived Risk | 1.93 | .94 | **.84** | | | .70 | .97 |
| 2. Attitude | 4.33 | .85 | -,363** | **.87** | | .76 | .93 |
| 3. Brand Equity | 4.30 | .83 | -,143** | ,310** | **.83** | .69 | .90 |
| 4. Behavioural Intention | 4.24 | .94 | -,249** | ,420** | ,285** | .83 | .94 |

*S.D.: Standard Deviation*
*AVE: Average Variance Extracted; CR: Composite Reliability*
*** p < .01; * p < .05*
*Entries in bold on the diagonal: The square roots of the AVE values.*

**Table: 3**
**Means, Standard Deviations, Correlations, Average Variance Extracted and Composite Reliability of the Variables Considering the Dimensions of Perceived Risk**

| *Variables* | *Mean* | *S.D.* | *1* | *2* | *3* | *4* | *5* | *6* | *7* | *AVE* | *CR* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Physical Risk | 2.29 | 1.23 | **.85** | | | | | | | .72 | .88 |
| 2. Financial Risk | 1.78 | 1.11 | ,445** | **.88** | | | | | | .78 | .88 |
| 3. Time Risk | 1.84 | 1.06 | ,572** | ,660** | **.86** | | | | | .75 | .90 |
| 4. Psycho-social Risk | 1.74 | 1.05 | ,614** | ,652** | ,739** | **.87** | | | | .75 | .94 |
| 5. Performance Risk | 2.08 | 1.10 | ,649** | ,615** | ,750** | ,732** | **.86** | | | .75 | .90 |
| 6. Attitude | 4.33 | .85 | -,268** | -,358** | -,211** | -,282** | -,463** | **.87** | | .76 | .93 |
| 7. Brand Equity | 4.30 | .83 | -,064 | -,166** | -,119* | -,111 | -,178** | ,310** | **.83** | .69 | .90 |
| 8. Behavioural Intention | 4.24 | .94 | -,118* | -,260** | -,184** | -,219** | -,302** | ,420** | ,285** | .83 | .94 |

*S.D.: Standard Deviation*
*AVE: Average Variance Extracted; CR: Composite Reliability*
*** p < .01; * p < .05*
*Entries in bold on the diagonal: The square roots of the AVE values.*

### 3.4. Testing Hypotheses

The study's descriptive statistics and data screening were performed by IBM SPSS 26. Then, confirmatory factor analysis was done using the Amos 24 statistical program to test the structural validity. PROCESS analyses (Hayes, 2017) were conducted to test mediation and moderated mediation effects. The mediation model (Model 4) (Hayes, 2013: 445) was used to investigate the potential role of attitude as a mediator in the relationship between perceived risks and behavioural intention. The moderated mediation model (Model 8) (Hayes, 2013: 448) was utilised to determine whether brand equity moderated the direct relationship between perceived risk and behavioural intention and the indirect relationship between perceived risk and behavioural intentions via attitudes. To evaluate the significance of the direct and indirect effects, 5000 bootstrap samples with 95% confidence intervals (CIs) were used in mediation and moderated mediation tests (Hayes, 2013, 2022). The effect is statistically significant when the upper or lower 95% CI does not contain zero (Preacher & Hayes, 2008).

**Table: 4**
**The Mediating Role of Attitude in the Relationship between Perceived Risk and Behavioural Intention**

| *Direct effects* | *Bootstrapped CI 95%* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *Model 1 (Attitude)* $R^2$ *= .144*** *F (1 , 278)= 46.802* | | | | | *Model 2 (Behavioural intention)* $R^2$ *= .188*** *F (4 , 275)= 20.303* | | | | |
| | *b* | *SE* | *t* | *LLCI* | *ULCI* | *b* | *SE* | *t* | *LLCI* | *ULCI* |
| Perceived Risk | -.346*** | .05 | -6.841 | -.446 | -.246 | -.113 | .24 | -2.669 | -1.131 | -.171 |
| Attitude | | | | | | .418*** | .06 | 6.454 | .291 | .545 |
| *Bootstrapping results for the conditional indirect effect* | | | | | | | | | | |
| | Effect | | | *Boot SE* | | | *Boot LL* | | *Boot UL* | |
| *Perceived Risk- Attitude - Behavioural Intention* | -.145 | | | .03 | | | -.223 | | -.080 | |

*b = Unstandardized regression coefficients*
*LLCI: Lower-Level Confidence Interval; ULCI = Upper-Level Confidence Interval*
*Bootstrap sample size = 5,000*
*** p < .001*

Firstly, the mediator role of attitude on the perceived risk and behavioural intention relationship was evaluated. The results given in Table 4 showed the significant indirect relationship between perceived risk [indirect effect *b* = -.145, Boot SE = .03, (%95 LLCI,

ULCI) = (-.223, -.080); $R^2$=.188; F (4, 275) = 20.303)] and behavioural intention through attitude. Consequently, the H1 hypothesis is supported.

The dimensions of perceived risk (i.e., physical, financial, time, psycho-social, and performance) are also investigated to comprehend better the role of attitude mediating between perceived risk and behavioural intention. According to the findings given in Table 5, each of the perceived risk dimension, such as *physical risk* [indirect effect *b* = -.085, SE = .02, (%95 LLCI, ULCI) = (-.137, -.041); $R^2$=.177; F (2, 277) = 29.751)], *financial risk* [indirect effect: *b* = -113, SE = .03, (%95 LLCI, ULCI) = (-.184, -.066); $R^2$=.191; F (1, 277) = 32.618)], *time risk* [indirect effect: *b* = -.087, SE = .03, (%95 LLCI, ULCI) = (-.152, -.034); $R^2$=.186; F (2, 277) = 31.705)], *psycho-social risk* [indirect effect *b* = -.099, SE = .03, (%95 LLCI, ULCI) = (-.174, -.048); $R^2$=.188; F (2, 277) = 32.011)], and *performance risk* [indirect effect: *b* = -.141, SE = .03, (%95 LLCI, ULCI) = (-.211, -.077); $R^2$=.192; F (2, 277) = 32.818)] and behavioural intention are mediated by attitude.

**Table: 5**
**The Attitude's Mediating Effect on the Dimensions of Perceived Risk-Behavioural Intention Relationships**

| | *b* | *SE* | *t* | *LLCI* | *ULCI* | $R^2$ *F (d.f.1 ,df2)* |
|---|---|---|---|---|---|---|
| Model 1 (IV: Attitude) | | | | | | |
| *Physical risk* | -.184*** | *.04* | *-4.63* | -.262 | -.106 | $R^2$*=.072*** F(1, 278) =21.462 |
| Model 2 (IV: Behavioural intention) | | | | | | |
| Attitude | .463*** | *.06* | *7.40* | .370 | .587 | $R^2$*=.177*** |
| Physical risk | -005 | *.04* | *-.10* | -.089 | .080 | F(2, 277) =29.751 |
| *Bootstrapping results in the indirect effect* | -.085 | *.02* | | -.137 | -.041 | |
| Model 1 (IV: Attitude) | | | | | | |
| *Financial risk* | -.273*** | .04 | -6.40 | -.36 | -.19 | $R^2$=.128*** F(1,278)= 40.939 |
| Model 2 (IV: Behavioural intention) | | | | | | |
| Attitude | .415*** | .06 | 6.48 | -.289 | -.541 | $R^2$=.191*** |
| Financial risk | -.106** | .04 | -2.17 | -.202 | -.010 | F(1,277)= 32.618 |
| *Bootstrapping results in the indirect effect* | -.113 | *.03* | | -.184 | -.056 | |
| Model 1 (IV: Attitude) | | | | | | |
| *Time risk* | -.198 | *.04* | *-3.59* | -.26 | -.08 | $R^2$*=.055*** F(1, 278) = 16.103 |
| Model 2 (IV: Behavioural intention) | | | | | | |
| Attitude | .439*** | .06 | 7.12 | .318 | .561 | $R^2$=.186*** |
| Time risk | -.094 | .05 | -1.79 | -197 | .009 | F(2, 277) = 31.705 |
| *Bootstrapping results in the indirect effect* | -.087 | *.03* | | -.152 | -.034 | |
| Model 1 (IV: Attitude) | | | | | | |
| *Psycho-social risk* | -.229*** | *.047* | *-4.90* | -.320 | .-137 | $R^2$*=.079*** F(1, 278) =24.006 |
| Model 2 (IV: Behavioural intention) | | | | | | |
| Attitude | .431*** | *.06* | *6.90* | .308 | .554 | $R^2$*=.188*** |
| Socio-psychological risk | -.098 | *.05* | *-1.93* | -.197 | .002 | F(2, 277) =32.011 |
| *Bootstrapping results in the indirect effect* | -.099 | *.03* | | -.174 | -.048 | |
| Model 1 (IV: Attitude) | | | | | | |
| *Performance risk* | -.358*** | *.04* | *-8.70* | -.438 | -.277 | $R^2$*=.214*** F(1, 278) =75.766 |
| Model 2 (IV: Behavioural intention) | | | | | | |
| Attitude | .395*** | *.06* | *5.85* | .262 | .528 | $R^2$*=.192*** |
| Performance risk | -.117* | *.05* | *-2.25* | -.220 | -.015 | F(2, 277) =32.818 |
| *Bootstrapping results in the indirect effect* | -.141 | *.03* | | -.211 | -.077 | |

*b = Unstandardized regression coefficients*
*LLCI = Lower-Level Confidence Interval; ULCI = Upper-Level Confidence Interval; IV: Independent variable*
*Bootstrap sample size = 5,000*
**** p < .001; * p < .05*

Next, through the moderated mediation model (Model 8) (Hayes, 2013), the *conditional effect of brand equity* is examined in the *direct* relationship between perceived risk and behavioural intention (H2) and the *indirect* relationship between perceived risk and behavioural intention via attitude (H3). Whether high compared with low levels of brand equity weakens the negative association was also tested. These were tested at three values of brand equity: low (at 1 SD below the mean), medium (at the mean), and high (at 1 SD above the mean).

The PROCESS analysis (Model 8) revealed *conditional effect of brand equity* in the *direct* relationship between perceived risk and behavioural intention [brand equity*behavioural intention b = .131, SE: .05; t: 2.37; p < .01, (%95 LLCI, ULCI) = (.023, .240); $R^2$=.229; F (4, 275)=20.379)] [$\Delta R^2$ = .016; F (1, 275) = 5.65)]. At low levels of brand equity, the negative direct effect of perceived risk on behavioural intention is significant [Brand equity $_{low}$ ; b = -.216; (%95 LLCI, ULCI): (-.362, -.070)]. When brand equity increases, however, the negative direct effect of perceived risk on behavioural intention becomes insignificant (Brand equity $_{medium}$ ; (%95 LLCI, ULCI): (-.221, -.007); Brand equity $_{high}$ ; (%95 LLCI, ULCI): (-.152, .121)]. Accordingly, H2. is supported. Moreover, the analysis revealed *the conditional effect of brand equity* in the *direct* relationship between perceived risk and *attitude*. High compared with low levels of brand equity weakened the negative association. At low levels of brand equity, the negative impact of perceived risk on attitude toward fitness centres is high [Brand equity $_{low}$ ; b = -.437; 95% (LLCI, ULCI) : (-.556, -.317)]. When brand equity increases, the negative effect of perceived risk on attitude diminishes [Brand equity $_{medium}$ : b = -.298; 95% (LLCI, ULCI): -.393, -.202 ; Brand equity $_{high}$: b = -.182; 95% (LLCI, ULCI): (-.301, -.062)].

The analysis *revealed the conditional effect of brand equity* in the *indirect relationship* between perceived risk and behavioural intention via the mediating role of attitude [*Index of Moderated Mediation*: .055; (Boot LLCI, Boot ULCI) = (.012, .100)]. High compared to low levels of brand equity weakened the negative association. At low levels of brand equity, the negative impact of perceived risk on behavioural intention is high through attitude toward fitness centres [Brand equity $_{low}$ ; b = -.145; (95% LLCI, ULCI) : (-.223, -.065)]. When brand equity increases, the negative effect of perceived risk on behavioural intention as mediated through attitude declines [Brand equity $_{medium}$: b = -.099; 95% (LLCI, ULCI): -.159, -.045 ; Brand equity $_{high}$: b = -.060; 95% (LLCI, ULCI): (-.123, -.019)]. Therefore, H3 is supported. The results regarding the conditional direct and indirect effects in the context of perceived risk, attitude, behavioural intention, and brand equity are presented in Table 6.

**Table: 6**
**Results of Conditional Direct and Indirect Analyses: Perceived Risk-Attitude-Behavioural Intention (Brand Equity Moderator)**

| *Direct effects* | *Bootstrapped CI 95%* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *Model 1 (Attitude)* $R^2 = .242$ *F (3 , 276) = 29.363* | | | | | *Model 2 (Behavioural intention)* $R^2 = .229$ *F (4 , 275)= 20.379* | | | | |
| | *b* | *SE* | *t* | *LLCI* | *ULCI* | *b* | *SE* | *t* | *LLCI* | *ULCI* |
| Perceived Risk | -.298*** | .04 | -6.14 | -.393 | -.202 | -.107 | .05 | -1.85 | -.221 | .007 |
| Brand equity | .247*** | .05 | 4.55 | .140 | .354 | .184** | .06 | 2.93 | .061 | .308 |
| Attitude | | | | | | .331*** | .06 | 4.91 | .198 | .463 |
| Perceived Risk * Brand equity | .167** | .04 | 3.45 | .072 | .262 | .131** | .05 | 2.37 | .023 | .240 |
| | *$\Delta R^2$ = 0.033; F (1 , 276)= 11.957* | | | | | *$\Delta$R2 = 0.016; F (1 , 275)= 5.65* | | | | |
| *The conditional direct effects (Perceived Risk - Attitude - Behavioural Intention Relationships: Brand Equity Moderator)* | | | | | | | | | | |
| | *b* | *SE* | *t* | *LLCI* | *ULCI* | *b* | *SE* | *t* | *LLCI* | *ULCI* |
| Low level of Brand Equity (-1 SD) | -.437*** | .06 | -7.19 | -.556 | -.317 | -.216** | .07 | -2.92 | -.362 | -.070 |
| Medium level of Brand Equity (Mean) | -.298*** | .04 | -6.147 | -.393 | -.202 | -.107 | .05 | -1.85 | -.221 | .007 |
| High level of Brand Equity (+1 SD) | -.182** | .06 | -2.97 | -.301 | -.062 | -.015 | .06 | -.22 | -.152 | .121 |

| *Bootstrapping results for the conditional indirect effect [Perceived Risk - Attitude - Behavioural Intention (Brand Equity Moderator)]* | | | | |
|---|---|---|---|---|
| | *Index of Moderated Mediation* | *Boot SE* | *Boot LLCI* | *Boot ULCI* |
| Brand Equity | .055 | .02 | .012 | .100 |
| | *Effect* | | | |
| Low level of Brand Equity (-1 SD) | -.145 | .04 | -.223 | -.065 |
| Medium level of Brand Equity (Mean) | -.099 | .03 | -.159 | -.045 |
| High level of Brand Equity (+1 SD) | -.060 | .02 | -.123 | -.019 |

*b = Unstandardized regression coefficients*
*LLCI: Lower-Level Confidence Interval; LCI = Upper-Level Confidence Interval*
*Bootstrap sample size = 5,000; $\Delta R^2$ : $R^2$ Change*
**** p < .001; ** p < .01; * p < .05*

Further understanding of the relationship between these concepts necessitates an examination of the *perceived risk dimensions*. The influence of the interaction term between *physical risk* and brand equity on behavioural intention (b = .126, SE: .04; t: 2.81; p < .01, (%95 LLCI, ULCI) = (.040, .224); $R^2$=.226; F (4, 275)=20.038)], which suggested that brand equity moderates the direct negative effect of physical risk on behavioural intentions [$\Delta R^2$ = .022; F (1, 275) = 7.917)]. At low levels of brand equity, the negative impact of physical risk on attitude toward fitness centres is high [Brand equity$_{low}$: b = -.130; SE: .06; t: -2.152; p < .05; (95% Confidence Interval LL, UL) = (-.249, -.011)]. When brand equity increases, the negative effect of physical risk on attitude becomes insignificant [(Brand equity$_{medium}$: (95% Confidence Interval LL, UL) = (-.1034, .062); (Brand equity$_{high}$: (95% Confidence Interval LL, UL) = (-.028, .171)]. Furthermore, the influence of the interaction term *physical risk* and brand equity on attitude is significant (b = .176, SE: .04; t: 4.25; p < .001, CI [.095, .258]; ($R^2$=.210; F (3, 276)=24.445), which suggested that brand equity moderates the direct negative effect of physical risk on attitude toward fitness centres [$\Delta R^2$= .052; F (1, 276)=18,139)]. The analysis *revealed the conditional effect of brand equity* in the *indirect relationship* between physical risk and behavioural intention via the mediating role of attitude was significant [*Index of Moderated Mediation*: *.063*, BootSE: .02; (Boot LLCI, Boot ULCI) = (.020, .110)] as given in Table 7. Similarly, the *conditional indirect effect* of physical risk on behavioural intention via attitude was significant at low and medium brand equity which also diminished the mediation effect [Brand equity $_{\text{low}}$ ; b = -.116; (95% LLCI, ULCI) = (-.178, -.055); Brand equity $_{\text{medium}}$ : b = -.064; 95% (LLCI, ULCI): -.097, -.032], however, the at high brand equity mediation relationship was not significant [Brand equity $_{\text{high}}$: b = -.020; (95% LLCI, ULCI) = (-.049, -.014)].

**Table: 7**
**Results of Conditional Direct and Indirect Analyses: Physical Risk-Attitude-Behavioural Intention (Brand Equity Moderator)**

| *Direct effects* | *Bootstrapped CI 95%* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *Model 1 (Attitude)* $(R^2 = .210)$ *F (3 , 276)= 24.445* | | | | | *Model 2 (Behavioural intention)* $(R^2 = .226)$ *F (4 , 275)= 20.038* | | | | |
| | *b* | *SE* | *t* | *LL* | *UL* | *b* | *SE* | *t* | *LL* | *UL* |
| Physical Risk | -.178*** | .37 | -4.83 | -.521 | -.106 | -.021 | .42 | -.48 | -.104 | .062 |
| Brand equity | .307*** | .05 | 5.62 | -.200 | .415 | .063 | .06 | 3.35 | .088 | .337 |
| Attitude | | | | | | .213** | .06 | 5.41 | .227 | .487 |
| Physical Risk * Brand equity | .176*** | .04 | 4.25 | .095 | .258 | .126** | .04 | 2.81 | .040 | .224 |
| | $\Delta R^2$ =.052; F (1 , 276)= 18.139 | | | | | | $\Delta R^2$ ==.022; F (1 , 275)= 7.917 | | | |
| *The conditional direct effects: Brand Equity Moderator* | | | | | | | | | | |
| | *b* | *SE* | *t* | *LL* | *UL* | *b* | *SE* | *t* | *LL* | *UL* |
| Low level of Brand Equity (-1 SD) | -.325*** | .05 | -6.29 | -.427 | -.224 | -.130** | .06 | -2.15 | -.250 | -.011 |
| Medium level of Brand Equity (Mean) | -.178*** | .03 | -4.83 | -.251 | -.106 | -.021 | .04 | -.48 | -.104 | .062 |
| High level of Brand Equity (+1 SD) | -.055 | .04 | -1.20 | -.146 | .035 | .071 | .05 | 1.41 | -.028 | .171 |
| *Bootstrapping results for the conditional indirect effect: Physical Risk- Attitude - Behavioural Intention (Brand Equity Moderator)* | | | | | | | | | | |
| | Index of Moderated Mediation | | | *Boot SE* | | *Boot LL* | | | *Boot UL* | |
| Brand Equity | .063 | | | .02 | | .020 | | | .110 | |
| | *Effect* | | | | | | | | | |
| Low level of Brand Equity (-1 SD) | -.116 | | | .032 | | -.178 | | | -.055 | |
| Medium level of Brand Equity (Mean) | -.064 | | | .017 | | -.097 | | | -.032 | |
| High level of Brand Equity (+1 SD) | -.020 | | | .016 | | -.049 | | | .014 | |

*b = Unstandardized regression coefficients*
*LLCI = Lower-Level Confidence Interval; ULCI = Upper-Level Confidence Interval*
*Bootstrap sample size = 5,000; $\Delta R^2$ : $R^2$ Change*
**** p < .001; ** p < .01; * p < .05*

The *direct* impact of the *interaction term financial risk* and brand equity on behavioural intention was insignificant [(%95 LLCI, ULCI): (-.016, .178)], suggesting that brand equity does not moderate the *direct* negative effect of financial risk on behavioural intention. In contrast, the impact of the *interaction term* between *financial risk* and brand equity on attitude was significant [*b* = .126, SE: .041; t: 3.04; p < .01; (LLCI, ULCI): (.028, .202); $R^2$= .219, F (3, 276) = 25.835)] suggested that brand equity moderate the direct negative effect of financial risk on attitude toward fitness centres [$\Delta R^2$ = 0.026; F (1, 276) = 9.260]. At low levels of brand equity, the negative impact of financial risk on attitude toward fitness centres is high (b = -.366; SE: .05; t: -6.44; p < .001; 95% Confidence Interval LL, UL: -.478, -.255). When brand equity increases, the negative effect of financial risk on attitude diminishes [(Brand equity$_{medium}$: b = -.271; SE: .04; t: -6.23; p < .001; 95% Confidence Interval LL, UL: -.356, -.185); (Brand equity$_{high}$: b = -.190; SE: .05; t: -3.56; p < .001; 95% Confidence Interval LL, UL: -.302, -.064)]. Moreover, the conditional effect of brand equity in the *indirect* relationship between financial risk and behavioural intention via the mediating role of attitude was significant [*Index of moderated mediation:* 0.038; Boot SE: .02; (%95 LLCI, ULCI): (-.014, .072)]. Thus, brand equity did not moderate the indirect relationship between financial risk and behavioural intention through the mediating role of attitude. As a summary, the analysis revealed that a) brand equity is not a significant moderating variable in the direct relationship between *financial risk and behavioural intention, and b) the index of moderated mediation is insignificant.*

In such a case, Hayes (2022:480) recommends pruning the model and changing Model 8 to Model 7. The PROCESS analysis (Model 7) revealed that brand equity moderates

the *direct* relationship between financial risk and attitude [financial risk*brand equity b = .125; S.E. = 0.4; t = 3.04; p < .01; (%95 LLCI, ULCI) = (.044, .207)] [$R^2$ = .219; F (3 , 276)= 25.835]. However, when the mediating role of attitude between financial risk and behavioural intention is considered, the moderating role of brand equity is insignificant, as given in Table 9 [Index of moderated mediation = .052; Boot S.E. = 0.2; (%95 Boot LLCI, ULCI) = (-.0002, .0943)]. Consequently, there is just a mediating role of attitude between financial risk and behavioural intention, as given in Table 5.

The results of the PROCESS analysis for time risk and psycho-social risk resemble each other, which are explained as follows: The *direct* impact of the *time risk**brand equity *interaction term* on behavioural intention was insignificant [*b* = .101, SE: .05; t: 1.77; p > .05; (LLCI, ULCI): (-.011, .213)] suggested that brand equity does not moderate the *direct* negative effect of time risk on behavioural intention. The *direct* impact of the interaction term, time risk *brand equity, on attitude (*b* = .194, SE: .051; t: 3.77; p < .001; CI [.028, .202]) is significant. Brand equity moderated the *indirect* relationship between time risk and behavioural intention via attitude [Index of moderated mediation: *.069*, BootSE: .026; (%95 LLCI, ULCI): (.017, .123)] was significant. The *conditional indirect effect* of time risk on behavioural intention via attitude was significant at low and medium brand equity, which also diminished the mediation effect [Brand equity $_{low}$ : b = -.115; SE: .03, (95% LLCI, ULCI) = (-.183, -.047); Brand equity $_{medium}$ : b = -.057, SE: .01, (95% LLCI, ULCI) = (-.096, -.021)]. However, the at-high brand equity mediation relationship was not significant [Brand equity $_{high}$: (95% (LLCI, ULCI) = (-.053, -.032)].

The moderating role of brand equity in the direct relationship between psycho-social risk and behavioural intention is *insignificant* [*b* = .090, SE: .04; t: 1.83; p > .05; (%95 LLCI, ULCI): (-.006, .187)], which suggested that brand equity has no moderating role in the direct negative effect of psycho-social risk on behavioural intention. The direct influence of the interaction term, psycho-social risk*brand equity, on attitude was significant [*b* = .140, SE: .04; t: 3.14; p < .01; (%95 LLCI, ULCI): (.052, .228); $R^2$= .187, F (3, 276) = 21.219)], which suggested that brand equity moderate the direct negative effect of psycho-social risk on attitude toward fitness centres [$\Delta R^2$ = .029; F (1, 276)=9,865)]. Moreover, the index of moderated mediation was significant (Index: *.049*, BootSE: .02; [LLCI, ULCI]: [.002, .095]), which suggested that brand equity moderated the indirect relationship between psycho-social risk and behavioural intention via attitude was significant. The *conditional indirect effect* of psycho-social risk on behavioural intention via attitude was significant at a low level of brand equity [Brand equity $_{low}$ : b = -.165; SE: .06, (95% LLCI, ULCI) = (-.289, -.041)]. However, the medium and high levels of brand equity mediation relationship were not significant [Brand equity $_{medium}$ : (95% LLCI, ULCI) = (-.188, .007)]; Brand equity $_{high}$: (95% (LLCI, ULCI) = (-.148, .093)].

In summary, the pruning process is utilised based on the insignificant moderating impact of brand equity on the direct impact of time risk/psycho-social risk on behavioural intention (Hayes, 2022: 480). In this sense, instead of PROCESS analysis Model 8, Model

7 or first-stage moderated mediation analysis (Hayes & Rockwood, 2017: 47) is conducted for time and psycho-social risk.

The PROCESS (Model 7) or first stage moderated mediation analysis (Hayes & Rockwood, 2017: 47) revealed that brand equity moderates the *direct* relationship between time risk and attitude [time risk*brand equity b = .194; S.E. = .05; t = 3.77; p < .01; (%95 LLCI, ULCI) = (.092, .295)] [$R^2$ = .175; F (3 , 276) = 19.622]. As brand equity increases, the impact of time risk on attitude decreases [Brand equity $_{low}$: b = -.320; S.E. = .06; t = -5.13; p < .001 (%95 LLCI, ULCI) = (-.443, -.197); Brand equity $_{medium}$: b = -.159; S.E. = .04; t = -3.41; p < .001 (%95 LLCI, ULCI) = -.251, -.067]. However, at a high brand equity level, the relationship was insignificant [(95% LLCI, ULCI) = (-.141, .093)]. When the mediating role of attitude between time risk and behavioural intention is considered, brand equity is a significant first-stage moderator, as given in Table 7 [Index of moderated mediation = .085; Boot S.E. = 0.3; (%95 Boot LLCI, ULCI) = (.018, .144)]. The first stage, moderating the role of brand equity in the indirect effect of physical risk on behavioural intention via attitude, was significant. As brand equity increases, the mediation impact decreases [Brand equity $_{low}$ ; b = -.140; 95% (LLCI, ULCI) : (-.216, -.059); Brand equity $_{medium}$ : b = -.070; 95% (LLCI, ULCI): -.113, -.027]. However, the at-high brand equity mediation relationship was not significant [(95% LLCI, ULCI) = (-.060, .037)].

**Table: 7**
**Results of Conditional Direct and Indirect Analyses: Time Risk-Attitude-Behavioural Intention (Brand Equity First Stage Moderator)**

| *Direct effects* | *Bootstrapped CI 95%* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *Model 1 (Attitude)* *($R^2$ = .175; F (3 , 276)= 19.622* *$\Delta R^2$ = 0.042; F (1 , 276)= 14.243* | | | | | *Model 2 (Behavioural intention)* *$R^2$ = .186* *F (2, 277)= 31.705* | | | | |
| | *b* | *SE* | *t* | *LL* | *UL* | *b* | *SE* | *t* | *LL* | *UL* |
| Time Risk | -.994*** | .22 | -4.42 | -1.436 | -.551 | -.093 | .05 | -1.79 | -..019 | .009 |
| Brand equity | .088 | .11 | .76 | -.313 | .137 | | | | | |
| Attitude | | | | | | .439*** | .06 | 7.12 | .317 | .560 |
| Time Risk * Brand equity | .194*** | .05 | 3.77 | .092 | .295 | .100 | .05 | 1.77 | -.011 | .212 |

| *Bootstrapping results for the conditional indirect effect: Time Risk- Attitude - Behavioural Intention (Brand Equity First Stage Moderator)* | | | | |
|---|---|---|---|---|
| | Index of Moderated Mediation | *Boot SE* | *Boot LL* | *Boot UL* |
| Brand Equity | .085 | .03 | .018 | .144 |
| | *Effect* | | | |
| Low level of Brand Equity (-1 SD) | -.140 | .03 | -.216 | -.059 |
| Medium level of Brand Equity (Mean) | -.070 | .02 | -.113 | -.027 |
| High level of Brand Equity (+1 SD) | -.010 | .02 | -.060 | .037 |

*b = Unstandardized regression coefficients*
*LLCI : Lower-Level Confidence Interval; ULCI : Upper-Level Confidence Interval*
*Bootstrap sample size = 5,000; $\Delta R^2$ : $R^2$ Change*
**** p < .001; ** p < .01; * p < .05*

The PROCESS (Model 7) or first stage moderated mediation analysis (Hayes & Rockwood, 2017: 47) revealed that brand equity moderates the *direct* relationship between psycho-social risk and attitude [psycho-social risk*brand equity b = .140; S.E. = .04; t = 3.14; p < .01; (%95 LLCI, ULCI) = (.052, .227)] [$R^2$ = .187; F (3 , 276) = 21.219]. At low levels of brand equity, the negative impact of psycho-social risk on attitude toward fitness centres is high (Brand equity$_{low}$ b = -.307; SE: .05; t: -3.259; p < .01; 95% Confidence

Interval LL, UL: -.415, -.198). When brand equity increases and becomes medium, the negative effect of performance risk on behavioural intentions diminishes [(Brand equity$_{medium}$: b = -.190; SE: .04; t: -4.28; p < .05; (95% Confidence Interval LL, UL) = (-.278, -.103). In contrast, as brand equity becomes higher, the negative effect of performance risk on behavioural intention becomes insignificant [(95% Confidence Interval LL, UL) = (-.204, .018)]. In the context of the mediating role of attitude between psycho-social risk and behavioural intention, brand equity is a significant first-stage moderator as given in Table 8 [Index of moderated mediation = .060; Boot S.E. = 0.2; (%95 Boot LLCI, ULCI) = (.003, .112)]. As brand equity increases, the mediation impact decreases [Brand equity $_{low}$ ; b = -.132; 95% (LLCI, ULCI) : (-.202, -.059); Brand equity $_{medium}$ : b = -.082; (95% LLCI, ULCI) = (-.128, -.042); Brand equity $_{high}$ : b = -.040; (95% LLCI, ULCI) = (-.0932, -.0008)].

**Table: 8**
**Results of Conditional Direct and Indirect Analyses: Psycho-social Risk-Attitude-Behavioural Intention (Brand Equity First Stage Moderator)**

| *Direct effects* | *Bootstrapped CI 95%* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *Model 1 (Attitude)* $R^2$ *= .187; F (3 , 276)= 21.219* $\Delta R^2$ *= 0.029; F (1 , 276)= 9.864* | | | | | *Model 2 (Behavioural intention)* $R^2$ *= .187 F (2, 277)= 32.010* | | | | |
| | *b* | *SE* | *t* | *LL* | *UL* | *b* | *SE* | *t* | *LL* | *UL* |
| Psycho-social Risk | -.793*** | .19 | -4.11 | -1.173 | -.413 | -.097 | .05 | -1.93 | -.197 | .001 |
| Brand equity | .024 | .10 | .24 | -.174 | .222 | | | | | |
| Attitude | | | | | | .431*** | .06 | 6.90 | .308 | .554 |
| Psycho-social Risk * Brand equity | .140** | .04 | 3.14 | .052 | .227 | | | | | |
| *Bootstrapping results for the conditional indirect effect: Psycho-social Risk- Attitude - Behavioural Intention (Brand Equity First Stage Moderator)* | | | | | | | | | | |
| | Index of Moderated Mediation | | | | *Boot SE* | | | *Boot LL* | | *Boot UL* |
| Brand Equity | .060 | | | | .02 | | | .003 | | .112 |
| | *Effect* | | | | | | | | | |
| Low level of Brand Equity (-1 SD) | -.132 | | | | .03 | | | -.2027 | | -.0596 |
| Medium level of Brand Equity (Mean) | -.082 | | | | .02 | | | -.1281 | | -.0424 |
| High level of Brand Equity (+1 SD) | -.040 | | | | .02 | | | -.0932 | | -.0008 |

*b = Unstandardized regression coefficients*
*LLCI = Lower-Level Confidence Interval, ULCI = Upper-Level Confidence Interval*
*Bootstrap sample size = 5,000;* $\Delta R^2$*:* $R^2$ *Change*
**** p < .001; ** p < .01; * p < .05*

The interaction term between performance risk and brand equity on behavioural intention was significant [b = -.122, SE: .05; t: 2.46; p < .05, (%95 LLCI, ULCI) = (.024, -.223)] [($R^2$=.233; F (4, 275)=20.934] which suggested that brand equity moderate the direct negative effect of performance risk on behavioural intention of the members [$\Delta R^2$ = .016; F (1, 275) = 6.056)]. At low levels of brand equity, the negative impact of performance risk on attitude toward fitness centres is high (Brand equity$_{low}$ b = -.220; SE: .06; t: -3.259; p < .01; 95% Confidence Interval LL, UL: -.353, -.087). When brand equity increases, the negative effect of performance risk on behavioural intentions diminishes [(Brand equity$_{medium}$: b = -.117; SE: .05; t: -2.29; p < .05; 95% Confidence Interval LL, UL: -.217, -.016). However, when brand equity is high, the direct impact of performance risk on behavioural intention is insignificant [(95% Confidence Interval LL, UL) = (-.149, .088)]. The impact of the interaction term between performance risk and brand equity on attitude was significant [b = .108, SE: .04; t: 2.46; p < .05, (%95 LLCI, ULCI) = (.022, .193); ($R^2$=.284; F (3, 276)=36.435] which suggested that brand equity moderate the direct negative

effect of performance risk on attitude toward fitness centres [$\Delta R^2$ = .016; F (1, 276)=6.097)]. At low levels of brand equity, the negative impact of performance risk on attitude toward fitness centres is high (b = -.413; SE: .05; t: -7.719; p < .001; 95% Confidence Interval LL, UL: -.518, -.308). When brand equity increases, the negative effect of performance risk on attitude diminishes [(Brand equity$_{medium}$: b = -.323; SE: .04; t: -8.08; p < .001; 95% Confidence Interval LL, UL: -.402, -.245); (Brand equity$_{high}$: b = -.248; SE: .05; t: -4.90; p < .001; 95% Confidence Interval LL, UL: -.348, -.149)]. However, the conditional effect of brand equity in the indirect relationship between performance risk and behavioural intention via the mediating role of attitude (Index of moderated mediation [(%95 LLCI, ULCI) = (-.016, .066)] was insignificant. Accordingly, brand equity did not moderate the indirect relationship between performance risk and behavioural intention through the mediating role of attitude. Thus, attitude mediates the direct relationship between performance risk and behavioural intention, as given in Table 5. In this context, a summary of the results is shown in Table 9 and Table 10.

**Table: 9**
**The Moderating Role of Brand Equity in the Direct and Indirect Relationships Between Perceived Risk Dimensions and Behavioural Intention**

| *Direct Relationships* | Perceived Risk | Physical Risk | Time Risk | Psycho-social | Financial Risk | Performance Risk |
|---|---|---|---|---|---|---|
| Brand Equity (Moderator) | ✓ | ✓ | ***X***$^{++}$ | ***X***$^{++}$ | ***X***$^{+}$ | ✓ |
| Low | ✓ | ✓ | N/A | N/A | N/A | ✓ |
| Medium | ***X*** | ***X*** | N/A | N/A | N/A | ✓ |
| High | ***X*** | ***X*** | N/A | N/A | N/A | ***X*** |
| *Indirect Relationships (via Attitude)* | | | | | | |
| Brand Equity (Moderator) | ✓ | ✓ | ✓ | ✓ | ***X***$^{+}$ | ***X***$^{+}$ |
| Low | ✓ | ✓ | ✓ | ✓ | N/A | N/A |
| Medium | ✓ | ✓ | ✓ | ***X*** | N/A | N/A |
| High | ✓ | ***X*** | ***X*** | ***X*** | N/A | N/A |

*Notes: ✓ : Significant, X : Insignificant; N/A: Not applicable*
*$^{+}$: Due to this insignificance, Model 4 is valid.*
*$^{++}$: Due to this insignificance, the model is pruned, and a PROCESS analysis of Model 7 is conducted.*

**Table: 10**
**Summary of the Results of the Analyses**

| | Model Support for Hypotheses in the Context of Perceived Risk and Dimensions of Perceived Risk | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Perceived Risk | | | Physical Risk | | | Time Risk | | | Psycho-social Risk | | | Financial Risk | | | Performance Risk | | |
| | Model 4 | Model 8 | Model 7 | Model 4 | Model 8 | Model 7 | Model 4 | Model 8 | Model 7 | Model 4 | Model 8 | Model 7 | Model 4 | Model 8 | Model 7 | Model 4 | Model 8 | Model 7 |
| H1. Attitude mediates the relationship between perceived risk and behavioural intention. | ✓ | | | ✓ | | | ✓ | | | ✓ | | | ✓ | | | ✓ | | |
| H2. Brand equity moderates the direct relationship between perceived risk and behavioural intention. | | ✓ | | | ✓ | | | ✓ | | | ✓ | | | ✓ | | | ✓ | |
| H3. Brand equity moderates the indirect relationship between perceived risk and behavioural intention via attitude. | | ✓ | | | ✓ | | | ***X*** | | | ***X*** | | | ***X*** | | | ***X*** | |
| Other Findings$^{+}$ | | | | | | | | | | | | | | | | | | |
| The first stage, moderated mediation, is significant for the moderation role of brand equity in the indirect relationship between perceived risk and behavioural intention. | | | | | | | | ***X***$^{+}$ | ✓ | | ***X***$^{+}$ | ✓ | | ***X***$^{+}$ | ***X*** | | ***X***$^{+}$ | ***X*** |

*Model 4: Mediation Model; Model 8: Moderated Mediation Model; Model 7: First Stage Moderated Mediation Model*
*$^{+}$ Pruning Model 8, conducting Model 7.*

## 4. Conclusion Discussion, and Managerial Implications

The findings supported the mediation, which proposed that the attitude was a mediator between how they perceived the risk and how they intended to behave. Perceived risk of fitness club members negatively affects their attitude toward fitness centres, decreasing their intention to visit them. In contrast, when members perceive less risk, their attitude toward visiting fitness centres will be more favourable, and they will be more likely to visit fitness centres. Accordingly, the managers need to consider the unfavourable effect of perceived risk on the members' attitudes and, consequently, their intentions to go to the fitness centres.

Understanding risk dimensions is also essential for comprehending its effects, the source of information sought, and the length of the decision-making process (Laroche et al., 2004). Examining the perceived risk dimensions, which in this context include physical, time, psycho-social, financial, and performance risks, is a crucial finding of this research that is incorporated into the proposed model. This model is also supported for each perceived risk dimension (physical, time, psycho-social, financial, and performance). They all negatively influence attitude, decreasing the members' behavioural intentions. When members perceive less physical, time, psycho-social, financial, and performance risks, they will have a more positive attitude toward attending fitness centres. They will, therefore, be more likely to have the intention or make plans to use the facilities. Existing literature supports the importance of risks in projecting consumer behaviour (Kim et al., 2021). This finding complies with the study of Braje et al. (2022), which demonstrated the mediating role of attitude between perceived risk and repurchase intention for short-term rentals. Palau-Saumell et al. (2021) identify the impact of perceived risk on attitude, which influences consumers' purchase intentions for locally produced goods. This finding is also consistent with the study of Zahira and Kurniawati (2022), who also identified the influence of consumers' perceived personal risk on consumer attitudes toward the Face Recognition payment method, which in turn influences satisfaction and repeat purchases at stores that use the Face Recognition payment method.

This research also revealed that brand equity moderates the mediation relationship (perceived risk-attitude-behavioural intention) by diminishing the perceived risk's negative impact on behavioural intention and attitude. Brand equity moderates perceived risk-attitude-behavioural intention linkage by reducing the negative impact of fitness club members' perceived risk on behavioural intentions and attitudes. When a fitness centre's brand equity is strong, the negative effect of perceived risk on behavioural intention as mediated through attitude declines. As the brand equity weakens, this negative impact is high through attitude toward fitness centres. Brand equity mitigates the perceived risk's negative effect on fitness club members' attitudes and subsequent behavioural intentions. Since the impact of perceived risk on attitudes and, consequently, behavioural intention is mitigated when brand equity is high, brand equity might be regarded as insurance in the perception of the risk-attitude-behavioural intention relationship. While the model in this study is not widely researched, the findings may align with existing literature in terms of

mitigating the adverse effects of certain variables on consumer perceptions and behaviour. For example, Hur and Kim (2020) find that when brand equity rises, the link between perceived corporate hypocrisy (i.e. misrepresenting the company's true nature) and aggressive customer behaviour weakens. Furthermore, Huang (2011) identified that brand equity moderates the impact of service recovery satisfaction on behavioural intentions. In another study examining the restaurant sector, restaurants with low brand equity are more vulnerable to the impact of electronic word of mouth (eWOM) on their financial success compared to those with strong brand equity (Wang et al., 2021). Wang et al. (2022) emphasise brands as reliable indications of product quality and credibility, reducing perceived risks and uncertainty. In other words, strong brand equity provides an advantage over weak brands (Huang, 2011).

Although the related hypothesis (H3) is supported, concerning the other findings, or the "dimensions of perceived risk," there are controversial results. The "physical risk" dimension of the perceived risk also supports the conclusion that brand equity moderates the perceived risk-attitude-behavioural intention relationship. Physical risks related to safety concerns (Stone & Grønhaug, 1993; Stone & Mason, 1995), such as spreading and receiving the virus, will result in a negative attitude toward the fitness centres, discouraging members from using them. When brand equity increases or members perceive brand distinctions, the mediation relationship regarding physical risk weakens. Hence, perceived physical risk is less likely to affect attitude and behaviour intentions due to brand equity negatively.

Brand equity perceptions of the fitness centres moderate the mediation relationship of "time risk - attitude - behavioural intention" and "psycho-social risk - attitude - behavioural intention" by diminishing the negative effect of "time risk/psycho-social risk" on the "attitudes" of the members. However, brand equity has no moderating effect on the direct negative effect of time risk or psycho-social risk on the members' behavioural intentions, or brand equity does not moderate the relationship between "time risk-behavioural intention" and "psycho-social risk-behavioural intention". In other words, when the members perceive using a fitness centre's services as a waste of time, a source of time pressure, or an inefficient use of time (Stone & Grnhaug, 1993), the attitudes of fitness centre members would be negatively impacted. In such a case, time risk indirectly influences members' behavioural intention through attitude. Similarly, when members feel psychological discomfort, anxiety, and tension with the disapproval of their social environment (i.e. others not finding visiting a fitness centre logical or as a show off) (Stone & Grønhaug, 1993) during the COVID-19 pandemic, their attitudes would be directly negatively affected. This psycho-social risk impacts behavioural intention through unfavourable attitudes of the members. When members perceive distinctions among brands or strong brand equity, the negative impact of time risk and psycho-social risk on behavioural intention as mediated through attitude declines. As the brand equity weakens, the negative impact of time risk or psycho-social on behavioural intention is high through attitude toward fitness centres. It is indirectly impactful because the time or psycho-social risk negatively influences attitudes and subsequent intentions of attending the fitness club. Due to reducing the negative impact of time risk or psycho-social risk on attitudes and

behavioural intentions, when members' perceptions about the fitness club's brand equity are strong, brand equity might be regarded as a strategic investment tool. Managers can offer members with a high perception of time risk unique, flexible schedules. For members who perceive a high psycho-social risk, it is possible to invite influential individuals (e.g., family members and close friends) to the fitness centre, which could help reduce psychological discomfort, anxiety, and tension.

Our study also revealed that "brand equity" has no "moderating effect" or differentiating capacity on the negative relationship between members' financial risk and behavioural intentions, financial risk and attitude, or the mediation model (financial risk-attitude-behavioural intention linkage). For the financial risk dimension of the perceived risk, brand equity has no conditional impact in this respect. More specifically, when the negative impact of financial risk on behavioural intention is considered, brand equity has no moderating role. There is only a mediating role of attitude between financial risk and behavioural intention. Therefore, considering the mediating role of attitude, what is crucial for members who perceive financial risk is not brand equity. Consequently, it is unsuitable to send messages concerning the symbolic meaning of the brand to those members. For fitness centre members who perceive high financial risk or a price-related issue (Stone & Mason, 1995), offering a money-back guarantee may be more effective than emphasising the fitness centre's brand name or symbolic significance.

Lastly, a similar finding was found for performance risk. Brand equity is not impactful or vital in performance risk-attitude-behavioural intention linkage. It is crucial that just as members' perceptions of performance risk rise, attitudes toward the fitness centre deteriorate, reducing the likelihood of their members' intentions to go to the fitness centre. For members who perceive a high level of performance risk, fitness centre staff may emphasise the critical aspects of service quality that are regarded as performance risk issues (Stone & Mason, 1995), which might have an influence on the reduction of the performance risk and positively influence their attitudes and subsequent behavioural intentions "instead of emphasising brand equity.". For example, they can provide information (visual, verbal, and experiential) about the qualifications and experience of their staff, the safety features of their equipment, and the physical atmosphere of the fitness centre. Thus, marketing communications tools or promotional messages can be utilised to address consumers' feelings of vulnerability resulting from their perception of risk (Milaković, 2021). By reducing perceived performance risk, marketers and managers can help create a more favourable attitude towards their facilities and increase the likelihood that individuals will join and use them regularly. By decreasing the perceived performance risk, managers may help members develop a more positive attitude toward their fitness centre and its facilities, thereby increasing the likelihood that individuals will join and utilise them.

## 5. Limitations and Recommendations for Future Research

Data from the members of the fitness centres were collected during the COVID-19 pandemic. The World Health Organization (WHO) has issued an announcement on its

website that the 31st of December 2022 will mark the end of global COVID-19 Public Health and Social Measures (PHSM) monitoring data updates (World Health Organization, 2022). This may indicate that the end of the COVID-19 pandemic is in sight. Nevertheless, it is anticipated that there may be other pandemics in the future (Smith, 2021). According to Professor Máire Connolly, who is in charge of the EU-funded PANDEM-2 project, the next pandemic will be caused by a new strain or virus of influenza, as described in Horizon, The European Union Research & Innovation magazine (Smith, 2021).

Thus, conducting more research in this area, including comparisons of different specialisation areas of fitness clubs and other countries, is important. Various factors influence the behavioural intentions of the members of the fitness clubs that the model of our study has not covered, and further studies might cover the influence of other variables such as crowd, gender, age, involvement, personality, and service quality. Further studies could explore additional platforms for fitness activities, such as social media, as well as consider various factors like attributes of YouTube channels and YouTubers (Kim, 2022: 11), personal factors (Ong et al., 2022: 11; Samritpricha & Vongurai, 2022: 75), and social factors (Samritpricha & Vongurai, 2022: 75). Future research could also enhance this study by using data collected through in-depth interviews.

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# APPENDIX: 1
# Factor Loading of the Variables' Items

| **Factors** / *Items* | β |
|---|---|
| **Financial risk** | |
| *Fin1* | .79*** |
| *Fin2*[a] | .97*** |
| **Time risk** | |
| *Time1* | .87*** |
| *Time2* | .82*** |
| *Time3*[a] | .90*** |
| **Performance risk** | |
| *Per1* | .80*** |
| *Per2* | .89*** |
| *Per3*[a] | .90*** |
| **Psycho-social risk** | |
| *Soc1* | .76*** |
| *Soc3*[a] | .75*** |
| *Psyc1* | .94*** |
| *Psyc2* | .92*** |
| *Psyc3* | .94*** |
| **Physical risk** | |
| *Phy1* | .91*** |
| *Phy2* | .90*** |
| *Phy3*[a] | .71*** |
| **Attitude** | |
| *Att1*[a] | .84*** |
| *Att2* | .97*** |
| *Att3* | .86*** |
| *Att4* | .80*** |
| **Overall brand equity** | |
| *Eqt1*[a] | .83*** |
| *Eqt2* | .94*** |
| *Eqt3* | .77*** |
| *Eqt4* | .77*** |
| **Behavioural intention** | |
| *Beh1*[a] | .91*** |
| *Beh2* | .93*** |
| *Beh3* | .90*** |

[a] *= factor loadings were fixed to the value of 1.0. β = standardized regression weights.*
*** *= P<.001*