



BS Thesis
in Business Administration

Health and Fitness Applications
Applying Habits of Generation Y to increase Gym Membership

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Viðskiptafræðideild



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Abstract

The primary aim of this thesis is to study the using patterns of health and fitness smart phone applications with a focus on Generation Y. The focus will be on marketing techniques tailored to encourage and motivate users to live a healthy lifestyle through smart phone applications. The secondary aim of this thesis is to establish possible routes health clubs can take to increase membership through using health and fitness applications. One application will be studied in detail due to its high popularity and successful outcomes. This application is the Nike Training Club. Through an analysis of features other successful applications already poses questions for the primary research were gathered. An attempt will be made to develop concepts, based on secondary and primary research, that can be used to increase health club memberships. The conclusion is that Generation Y uses and will continue using applications of the sort for a long time and that the features they expect them to have are motivational, linked to social media, gadget or GPS oriented and essentially free.

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1 Introduction

In recent times the financial and technological environment has risen to be quite diverse and turbulent. This has been due to many factors such as the speedy innovation in technology, large amount of trends that very quickly become outdated and other advances of the sort along with the economic crises. It has become very difficult to predict the future of many financial ventures in these trends. Exercise has always been a part of human development. Since history as we know it has existed, sportsmanship has prevailed. In the 21st century, healthy living is a cutting edge topic. Businesses have been built on the premise that people want to partake in physical exercise and a healthy lifestyle. This all ranges from going to the gym to particular nutrition. This is why strategic thinking aimed at developing a good competitive advantage is so important. Technological advances in this past decade have brought upon a new era of smart phones and handheld devices that are capable of searching for anything and everything at the same time. There are two generations that grew up with this advantageous skill but only one of them is above legal age and that is generation Y. This generation had been presented with a unique opportunity to have the world one click away. Their “addiction” to their smart phones opens up a new array of businesses in the smart phone application world. Due to this fact it is important to not hang behind in this trend because it is changing and developing with every moment.

This paper will probe into steps for further expansion for health clubs by examining smart phone trends of Generation Y in the health and fitness category. Focus will be put on one extremely successful app on the market, Nike Training Club, and its appealing features to all generations. In the introductory part of this paper the history and trends behind fitness and smartphones will be discussed to illuminate the path to superior health and fitness applications. After which the literature review section will look into in-depth studies and concepts in this field. Following will be the primary research conducted in survey format with a relevant sample of 142. The discussion and conclusion will follow shortly after. The following paper is aimed at applying the use of health and fitness application trends of generation Y to further and increase health club memberships.

The importance of studying this topic is twofold. Primarily, it is for businesses to develop models and applications catered to the new generation taking over the working environment. Second, it is to investigate further possibilities for increasing physical activity and healthy living standards for a population that is slowly getting used to machines doing many primary human functions for them. This is why the topic is important to examine and information on how to keep up with the ever-changing world is essential.

1.1 Purpose

The principal purpose of this paper was to investigate generation Ys usage of health and fitness applications. By examining and analyzing secondary research the paper will delve into the relationship between this generations characteristics and the opinions on these apps. The secondary purpose of this study was to apply information from the health and fitness applications to gym locations in the hopes of increasing membership along with aiming for a healthier lifestyle for people. Gaining in-depth knowledge on generation Ys habits and values on mobile applications will inform the development of health and fitness application for increased profit and business advances.

2 Exercise & Fitness

“Physical fitness is not only one of the most important keys to a healthy body, it is the basis of dynamic and creative intellectual activity” (John. F. Kennedy). The initial anatomy of people reserves them the right to move freely and our body requires movement for the muscles and bones to thrive. From the beginning of our historically verified time, there has been mention of sports. In the complete beginning movement was used for survival purposes, like hunting for food, procreating and providing a habitable space. As civilization set in sports started to evolve with competing purposes like in the Olympic games for the Greek. At that point people started training and pushing their bodies to reach full potential to be the victor. . “Data from the distant past are not available, but it is reasonable to speculate that early humans had considerably higher caloric expenditures per unit of body weight than do modern individuals” (Cooper, 2013).

As time progressed so did physical activity. Even in the industrial period, after the first steam engine was developed and as agricultural ways had already been established with a society of people who grew their own food, the average person still burned more calories than nowadays. As the technological era kicked in, physical activity declined for the average person but as most observers have stated there was an increase in recreational sports. Sports had reached a new level of participation. Training had become a real option for all classes and physical activity rates slowly began to rise again towards the end of the 20th century. At this time, more people had the option to train to become an athlete. This started including a package deal, having a personal trainer, eating a good diet and creating a generally more socially acceptable image of health. Towards the end of the 20th century exercise became an image and a lifestyle. People from all backgrounds wanted to be a part of this world. Therefore a niche developed for businesses. Personal training had now become an all people’s game. Within the fitness world people were getting heavier and bulkier. Introducing a new fashion and new take on bodybuilding. In the fashion industry models were getting skinnier and fitter making the general public yearn for a similar physique. In this manner, personal training was bound to follow.

In the beginning of the 21st century healthy living had become a trend that every person wanted to be a part of. As levels of obesity rose in the United States from the development of fast food and energy saving devices, training and higher health standards followed. According to numbers from the *Sporting Goods Manufacturers Association* around 61 million Americans are inactive. These numbers can be found in the chart presented below. Over the span of four years the number of people who are inactive increased by 10.2 million. This number is quite large when one looks at the population of America of 320,560,631 people in comparison (Worldometers, real time world statistics, 2013). The chart indicating inactivity rate rising is displayed here below.

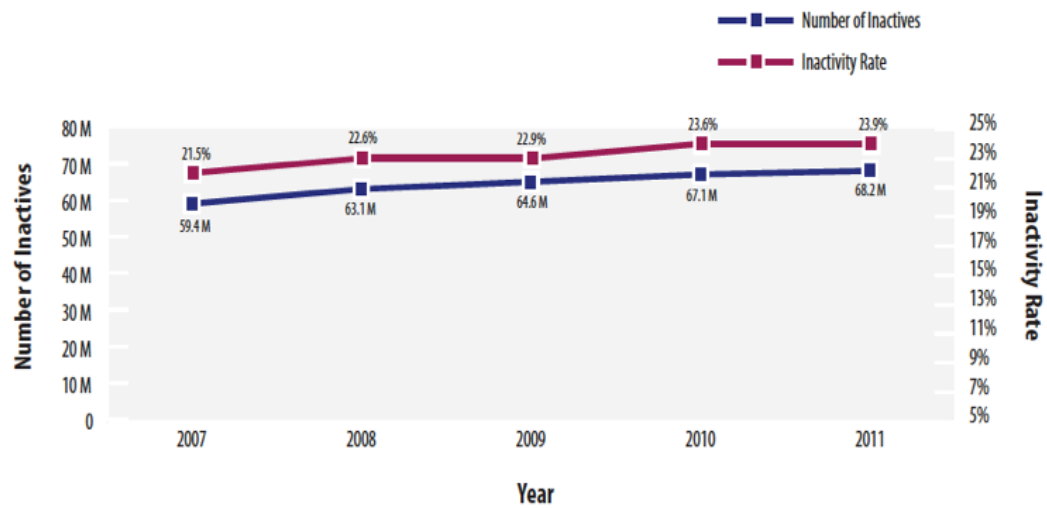


Figure 1. Number of In actives and the Inactivity Rate

Though comparatively, “There is a clear desire by Americans to participate in a number of fitness, sports and outdoor activities, but they just do not know where to start.” (Keith Storey, VP of Sports Marketing Surveys USA). The chart indicates the different sorts of sport chosen by age and participation rate. It is possible to see that as people get older individual activity decreases. The only two increasing factors are fitness and no sport. This is a clear indicator that the fitness app appeals to a person at any age.

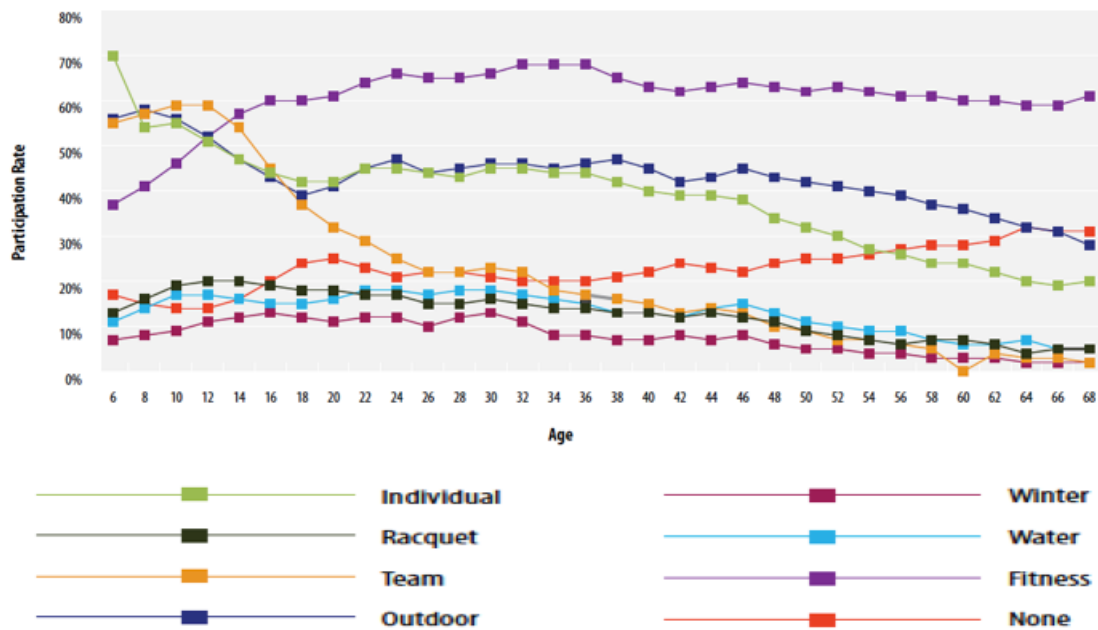


Figure 2. Participation in different sport choices by age

The options for fitness have become extremely diverse for the public therefore each individual can adapt their capabilities and wants to different programs. According to a program called “she found fitness” three out of five Americans want to lose weight (Facebook advertising) This shows that there is a very good market for health & fitness the main obstacle is reaching out to the public through a medium they comprehend and attract.

3 Demographics and Psychographics

Individuals born between the years of 1977 and 1997 are regarded as generation Y. This was the last generation born wholly in the 20th century. They are the children of the baby boomers (1943-1960) and the parents of the youngest generation (California State University, 2005). This data varies between sources some say the years are different but this is the general consensus. The population of echo boomers has just recently risen above baby boomers and now sums up to 80 million people. This in turn means that purchasing power will switch from baby boomers to echo boomers in a short period of time. Therefore this has gradually become one the largest buying power in American and makes up for large spending sums. According to a study by California State University, on average a teenager spends about \$84 a week (both parents and own), which contributes to about \$187 billion a year.

While looking at such major statistics one needs to consider the issue of diversity, generation Y is the most diverse generation yet. There are about 59.8% non-Hispanic Caucasians, about 18.5% Hispanic, 14.2% African American and the rest makes up for the 7.5% (McCrea, Bridget, 2011). Along with being ethnically diverse comes the notion of being racially receptive. Gen Yers are probably the most accepting of racial diversity out of all the generations because of the fact that globalization and facilitation of living rights has allowed so many people to live in many different places that are not their original homes. In that manner generation Y has been faced with diversification since young years and are used to every ethnicity having same rights and same capabilities.

This generation saw the hard times of gen X and baby boomers (to some extent) from which they gathered knowledge learned and formed completely new opinions and expectations. That is why this generation is so unique, they have been influenced by so many quick changes in the near past that their perception is far different from anything that has been seen before (Sebor, 2006). They grew up in a very brand conscious world and were influenced by people who always pushed for the best for their children hence they were raised as consumers possibly more than as customers.

4 Technology

Technology has played a crucial role in the upbringing of this generation. It is basically what they are best at – one can provide these individuals with any sort of technology and they would be the most capable out of the entire workforce to work with it and adapt to it in a fast manner. Probably the main cause for such tech savvy capabilities would be that this was the first generation to have access to computers from home as they grew up therefore information gathering has become one of their most attended matter - capable of accessing greater breadth of information quickly. 97% of this generation utilizes mobile phones on a daily basis (Alex Peak, 2011).

The growth of the Internet was a major detail in the upbringing of generation Y but on top of that, wireless (WiFi) was what made the world turn over. Every generation Y person possesses a smartphone, tablet, ipod or any sort of small gadget that allows them to access the web through a mobile device (Lucy, 2011). What is so surprising is how much time is spent on these devices. The average American spends about 80% of the day on a mobile device purely. This did not take into account how frequently people use multiple smart devices to work in different parts. One gadget used for article reading, second for email answering, third for social networking and on the side a telecommunicating device (telephone). According to statistics about 30% of Internet users are Gen Yers, 23% Gen X and the rest is divided by the generations before these two (Jones & Fox, 2009). Also the reason for the success of the Internet in the business world has partially been due to the fact that emailing has been chosen as the preferred method of communication between business, customers and simply individuals. There is such a large amount of them, that their features cannot be ignored and the methods used on previous generations do not work as well as they used to as these hard to influence new workers.

4.1 Smartphones

The smart phone is a mobile telephone with built in personal information management programs and a operating system (OS) that enables the device to access computer software for internet browsing. Through this access to Internet one can utilize it for email, music and other applications. Essentially, the smart phones can be looked at as a handheld computer. It has been noted that by the third quarter of 2012 there were around one billion smart phones used by consumers worldwide. (Reisinger, 2012).

IBM was the first company to develop a smart phone in 1993. The phone had a touchscreen interface but had limited access to computerized functions. It is due to the fact that the market for computer memory and integrated circuits became more mature that the cost of such technology diminished paving the way for more computer-like smart phones. In 2001 the first third generation (3G) mobile phone was introduced. This meant that messages and information could be sent at bit-rates high enough for large data to be received, like music, photographs, clips and more. The operating systems used by these smart phones are typically Microsoft Corporations windows mobile OS, Android, Google etc., while Apple's iPhone and Research in Motions Blackberry developed their own systems.

One of the most popular features on smart phones is the built-in camera. It allows one to record and transmit short clips and photographers. Almost every smart phone can access Wi-Fi hot spots, which enables users to use the Internet instead of operating on the cellular telephone transmission fees. A smart phone also has a built-in global positioning system (GPS) location chip which can tap into augmented reality. Through the GPS one can use the phones camera to pick points of interest to get information from the Internet regarding the place, product, or registry.

According to Business Insider the latest data from IDC shows that Android now has 79.3% of the global smart phone market where as, Apple has 13.2% of the market. The chart below demonstrates a breakdown between the largest operating systems and the market share associated with them.

Top Smartphone Operating Systems, Shipments, and Market Share, 2013 Q3 (Units in Millions)

Operating System	2Q13 Unit Shipments	2Q13 Market Share	2Q12 Unit Shipments	2Q12 Market Share	Year-over-Year Change
Android	187.4	79.3%	108	69.1%	73.5%
iOS	31.2	13.2%	26	16.6%	20.0%
Windows Phone	8.7	3.7%	4.9	3.1%	77.6%
BlackBerry OS	6.8	2.9%	7.7	4.9%	-11.7%
Linux	1.8	0.8%	2.8	1.8%	-35.7%
Symbian	0.5	0.2%	6.5	4.2%	-92.3%
Others	N/A	0.0%	0.3	0.2%	-100.0%
Total	236.4	100.0%	156.2	100.0%	51.3%

Source: IDC Worldwide Mobile Phone Tracker, August 7, 2013

Figure 3. Top Smartphone operating systems, shipments, and Market Share in 2013(Yarow, 2013)

Andy Rubin founded android in October 2003. Google backed it along with many other big names in the software development world like Samsung and Motorola. The first phone using android was released in October 2008. HTC Dream was branded by T-Mobile as generation 1. It had most of the Google applications installed in it like Google maps, calendar and Gmail. Google play, which launched in October 2008 as well, allows the user to purchase third-party free and paid applications. HTC Corporation released a smartphone that can produce stereoscopic 3D effects in June 2011 and Samsung Galaxy sales skyrocketed to 18 million in the third quarter of 2012.

Apple Inc. introduced the original iPhone in 2007. It was one of the first mobile phones to use a multi-touch interface. It very quickly became well known for its large touchscreen, which did not need a keyboard or stylus like most phones before it needed. In 2008 the second-generation iPhone was released with a lower list price. At the same time Apple introduced the App Store, which allowed all iPhone users to download third party native applications without needing a PC. The iTunes software client, who all apple products were connected to from the beginning, was also used as a medium to browse applications. In 2010 iPhone 4 was introduced with several improvements including a front-facing camera. After which iPhone 5

followed in September 2012 with a new design, lighter and thinner than ever, where the quality of the camera was improved and many new features introduced.

Since 2008 the app store grew from 800 applications to approximately 900,000 according to apples announcements (Costello, 2013). It spawned many successful businesses and added substantial value to what a smart phone is known to be. According to statistics published on statista and presented on this graph, these are the most popular app store categories recorded up to July 2013.

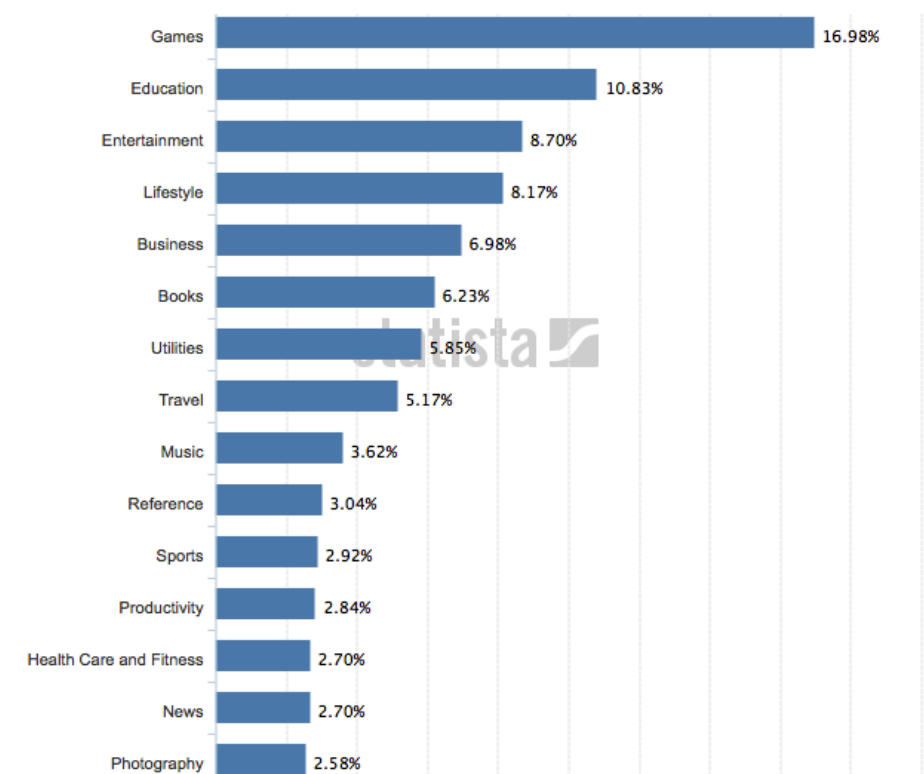


Figure 4. Breakdown of application categories in the Apple App Store (July, 2013)

(Apple: Most popular App Store categories 2013, 2013)

It is possible to see that Games take up the majority of downloaded apps and health care and fitness takes up about 2.7% of the available active applications. But there is great potential for growth here, especially amongst the younger population as was mentioned before they are especially tech-savvy and focused on health trends.

4.2 Trends

One of the biggest problems with generation Y though is their non-stop change in preferences. They are known to be very extrovert and are always on the look out for better deals for more quality. That is why they are capable of taking a brand they have adored for several months and changing it in for something that may simply sound new and hip. Things that are trendy and cool change every couple of days and it is relatively difficult for companies to keep ahead of the game.

One “trend” that generation Y has followed (the reason for the quotation marks is because this is more like a new lifestyle rather than a trend) is healthy living. There is a certain health frenzy going on where every person wants to work out and eat healthy. (Brox, 2011) This is a very beneficial thing for society as a whole but considering how it was not like this not long ago it is interesting to see how fast this health fad has spread. Many companies are striving to be healthier and greener which makes consumers of this generation much more attracted to the products. Brands such as McDonalds that are known to be quite unhealthy have been creating alternatives for new consumers. Will it last? Or would there be an alternative, which would conquer all?

One thing that companies should understand is that this generation is one of multitasking. They are capable of doing multiple things at the same time and in truth they actually like it. An average millennial could easily be watching something on TV while browsing the Internet and being on the phone. Though it has been shown that they do possess some negative feelings about their media consumption habits and multi-tasking (Rohm et al. 2009). While on one hand they feel as if they have control, more efficiency, engagement since it is a fun activity, and assimilation, on the other hand, a study has shown that they may feel inefficiency (distracting or leading to procrastination), chaos, disengagement and enslavement (Rohm et al. 2009). According to this, as positive traits do exist there may emerge negative feelings at the same scale. It is crucial to be aware of this relatively low focus span because reaching out to this generation is all about the right place and the right time. Using multitasking media marketing would be highly recommended for the Millennials but

one must be cautious as not to send trap the consumer and make them experience negative feelings (Rohm et al., 2009).

Due to the fact that so many Generation Yers use the Internet as innate knowledge, it must be recognized that it would be a very good place to market products. Once a company has a way of business online it is very easy for them to reach out to this population.

It is a widely known fact that social networking plays a big role in any average Millennials life. Communicating virtually has to some levels replaced face-to-face contact as well as facilitates interactions. Social networks like Facebook and Twitter have become so widely used that they are accessible through almost any type of device, which has access to the Internet. Young adults are on their smartphones, tablets, computers constantly looking out for what is new with people, with brands, what is going on in the world and trend spotting. Twitter even has a feature which allows one to follow which trends are popular at the moment therefore it is not difficult to stay up to date. Around 3% of Generation Yers have even said they gather news from these sites (McCrea, 2011). It would be beneficial for a company to look into this and start using these networks to become more personal with these consumers and make them into customers. After all, Generation Yers value respect and accessibility very much (Walen, 2007). The way to do this may vary though. A survey of about 571 participants showed that online coupons and side panel ads are preferred to pop-up advertisements for example and graphics play a big role in grabbing their attention (Smith, 2011).

One thing that all Gen Yers have in coming though is the fact that they read some sort of reviews of products and services on line. Word of mouth is probably the most relevant method of marketing for the Millennials (Bradley, 2010). They have been brought up in a multimedia world therefore they are very capable in deciphering brand symbolism and understand a great deal in marketing methods.

4.3 Applications

The apple app store gives best access and information on each application out of all the app servers for smart phones therefore from here on in the categories and applications discussed will be retrieved from the app store.

In the App Store one can see that there are 5430 applications in the “health and fitness” category. Around 76% of these apps are to be paid for. This is limiting for generation Y because at the moment they are not in the highest income margin. The bar chart below indicates the diverse income groups between 3 types of generations. 2007 shows that income for Generation Y is smaller than the rest, which makes sense because by that year they are the youngest out of the workforce being compared. Generation X receives the most holding them as the highest buying power. Though the predictions show a lot of great growth it is still predicted that Gen Ys will be receiving higher wages than that of generation x. The chart below presents the income bracket in 2007, 2012 and predicted 2017 for three different generations.

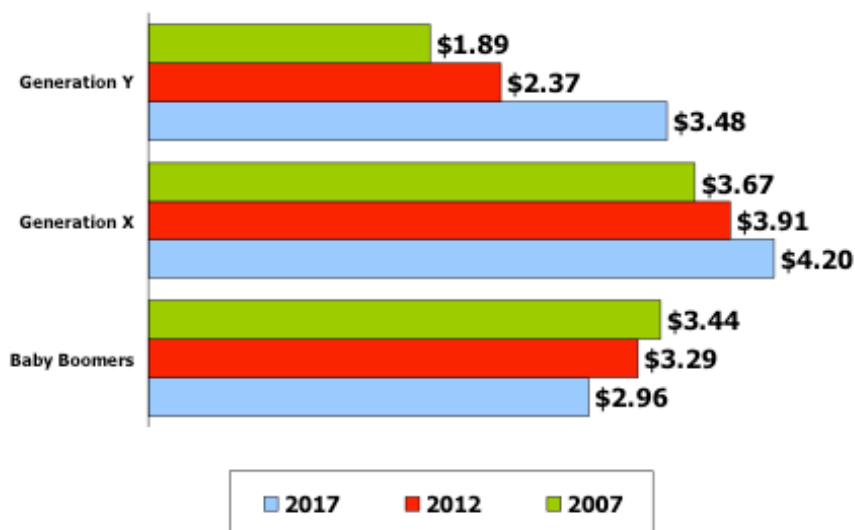


Figure 5. US Total annual income by generations

If one follows these figures it is clear that when introducing new applications into the app world, they cannot be priced too high if they are to be suitable for generation Yers. In a study of undergraduate use of health applications it was found

out that 78% of the health apps downloaded by college students were free and the most important elements “to purchase an app were price (44%), positive review/ratings (26%), and achievement of a specific health goal (18%)” (Haithcox-Dennis, Brinkley, Richman, DeWeese, & Byrd III, 2012).

Now more than ever there is a large amount of people living in the online world therefore it is crucial to stay up to date and intact with advances and trends. Every growing business must make sure to have a easily accessible and retrievable website. According to the latest data on internetworldstats.com there are 2,405,518,376 Internet users in the world. This clearly shows the importance of online development. The website has to be comprehensible and uncluttered. Users will redirect to the website to find image and information on reliability of the application. If the website is not convincing enough or unorganized they will refer to an outside source where information is not in the creator or businesses hands. If the website manages to portray and encompass the mission along with values of the company or app then the users will proceed to download. Generation Y and baby boomers have different viewing behaviors and aesthetic reactions to websites (Tullis, Skorinko, Siegel & Djamasbi, 2011). Therefore it is imperative to be aware of their preferences. In the study by Tullis et al. there were numerous findings. Amongst them was the idea that Generation Yers do not take in information below the fold of a website, because of the “confirmation bias” website users who have a negative impression continue to search for reasons to dislike the website to confirm their original thought and that Generation Y needs features to be customized. These findings are very important in creating a website. It does not only provide more room for information but it will in itself lead to new buzz around the application.

When an app is created and a marketing goal is established the launch would be implemented. Segmentation, target and positioning are crucial steps to implement a good marketing mix. In the segmentation part of the process the business must identify all segments for the app. The health and fitness application sector is narrowly based which means it has high accessibility. After finding the right segment, targeting comes into the picture. This is where the focus is set on the group of related customers and users. In the health application sector the target is

the consumer looking for mobile health and fitness benefits. The last step in STP is positioning where the app is put into the sector and its existence is marked in the consumers mind. The benefits and features of the app are what position it properly parallel to competitive apps. All together an appropriate and well-formed marketing mix is what will keep the product progressing. As technological advances are made it is crucial to follow them as to not lose sight and credibility in the sector. Apps like the Nike Training Club have positioned themselves properly with a good background and image to pursue possession of the market.

4.3.1 Nike Training Club

The Nike Training Club is a training app that allows one to have a virtual personal trainer. Enclosed in the app are over 60 custom-built workouts with features like audio guidance and on-demand instruction from a Nike Professional Trainer. The pleasant thing about this app is that master trainers Nike founded develop it. Since the iPhone has iTunes installed in it Nike Training Club allows personalized playlists to be a part of the workout. Users are in charge of setting their own goals and the app finds the most efficient and effective workout to cater to the users desires. It was originally designed for women but with several improvements has become more male friendly.

The app remembers which workouts one has done and keeps them in a quick-start menu which appeals to people living life at a very fast pace. The four main focuses of the workouts are strength, cardio, interval and core training related. When users reach training milestones there are several exclusive rewards waiting. The app keeps record of previous accomplishments and allows one to view them periodically. The app is connected to Facebook and twitter among other social media networks. The user can share the workout and reward status and share the entire Nike training club experience.

What Nike has essentially managed to grasp is that each person is different and the app needs to cater to each one of its users specific needs. The idea to work together with apple to have Nike connected to the iPod is very intelligent because studies have shown that working out to music increases the individuals motivation

and burn rate. Not only that but they let the user input the music according to their own taste. This level of personalization is crucial for growth in any industry. Nike has also managed to capitalize in several different health app sectors with Nike+, Nike+ Running and Nike+ Fuel Band, which keep them well positioned (Nike, Inc. 2009).

Nike managed to blur the line between service and advertising. 'Ideas that inspire people to pay attention, stimulate their curiosity, reward their intelligence and therefore create an emotional connection have the greatest engagement,' said the vice president of digital sport at Nike Stefan Olander. Nike+ club utilizes its name and leads people to look above the product. In this manner they make use of word of mouth, which has already been one of the leading marketing schemes used by the company in their mobile application department. Overall, there are more than 600 million miles run and the community goes up to 8.5 million +.

4.3.1.1 SWOT Analysis

A SWOT analysis was made for the Nike Training Club. Due to the fact that it has had such great success in the healthcare and fitness category it was interesting to see how their strengths played to their advantage and what opportunities they have lying ahead of them.

Strengths	Weaknesses
Fitness app market leader	Limited expansion
Produces results	Certain market group difficult to hold
Good marketing strategy	Needs development in extra apps
Minimizes cost by using Word of mouth	New logins discouraging customers
Free	High Competition
Uses Brand Loyalty	
Strong Image	
Opportunities	Threats
Room for extended products	Increasing competition
Growing market through development and penetration	Average selling price is decreasing
Trend in healthy lifestyle	Applications have a shorter Loyalty span
Consumers search for pre-established brands	
Target more senior users	
Link products and app	

Figure 6. SWOT Analysis of Nike Training Club

The SWOT analysis provides information on the internal and external environment of the company. This analysis is an essential part in the strategic planning process because it allows the developers to see how their resources can be matched up to their capabilities. In Nike's case there is a great deal of opportunities in the health and fitness application field. Since the current app has managed to grasp the attention of a great following, it is evident that the company has been progressing into the right direction.

5 Customer Based Brand Equity Pyramid

A strong brand is very important in any business venture. For application creators and business alike there are several procedures they can attend to for a healthier and stronger business model. The Customer based brand equity model aids in building a unique and favorable brand, which essentially could be applied to health and fitness applications.

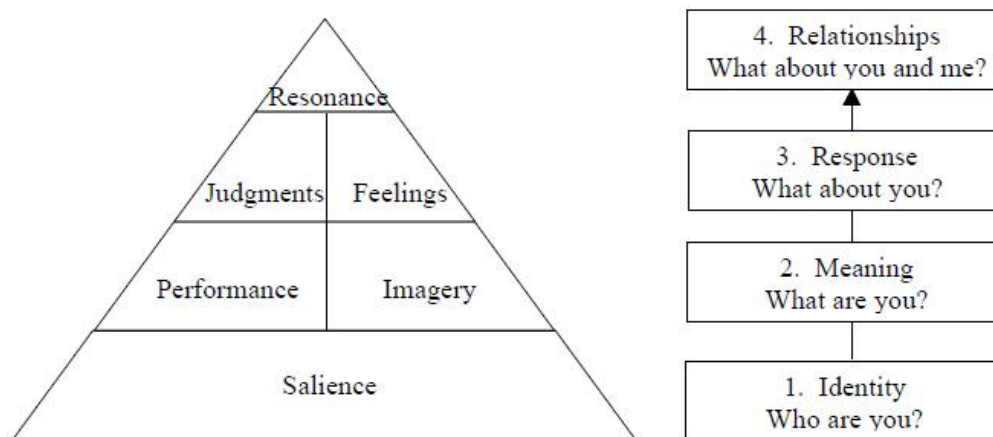


Figure 7. Customer based brand equity pyramid

The first step in the pyramid is salience. This step encompasses brand awareness. The identity is important when it comes to selecting companies one wants to be connected to. In this case, the Nike Training Club did a wonderful job. Nike is a very well established brand in people minds therefore recognition and recall are imminent. The step following is performance where the consumer establishes meaning. Through several different performance dimensions like characteristics, reliability, durability, efficiency, sympathy, style, design and price, individuals manage to think of both tangible and intangible associations with the brand. For health and fitness applications this would be partly associated with reviews of their performance and design of the app depending on how it appeals to the consumer. On the same level as the previous step is Imagery, where meaning is still what is trying to be established. This is where intangible features of the brand take effect. The different user profiles associated with the brand or app. There is a wide array of people using smartphones and health applications but the majority of them (if generalized from data recovered in the research) appeal to the younger generations. The situations in which the purchase or acquisition of the app are important. All

applications for mobile phones are purchased or acquired online in the app store. Consumers normally pick brand personalities, which are consistent with how consumers see themselves. A user who perceives oneself to be very sporty and live a healthy lifestyle will pick an app like Nike while people who prefer to do sports with a sense of humor would pick the Zombies, run! App. In the app world there is not a long line of history or heritage therefore this aspect is not applied directly, but the experiences shared through the app of the creators and the current users engages people and makes them feel like it's a shared experience. The third step in the pyramid is judgment. It encompasses personal opinions regarding the brand. The dimensions the consumer's focus on are the quality, credibility, consideration and superiority. In the app world it is common that the most downloaded apps and most popular apps are the ones that appear first in the menu. This is due to superiority and to some extent credibility. On the same level as judgment is the feelings stage. This is to do with how favorable the brand is to the consumer. Are they associating themselves with the app for the fun of it, the social approval, to increase self-respect? The feelings usually are of strong dimensions. The fourth step is resonance where the brand response emits a intense and active loyal relationship with the consumer. Once all the other stages are complete this stage can be reached with ease. When an app is engaging enough the user becomes somewhat attached to it and loyal. Around users of the sort a community originates which is what essentially attracts new users. This is the highest level on the CBBE pyramid and is what each brand aims for to reach a strong and respectful brand identity (Keller, K.L .et al., 2012).

6 Social media

One of the main features all these apps have in common is the fact that they link to social media. Since around 2004 (Hall, 2013) when Facebook joined the social media game there has been a vast rise in postings of goal related content. One could state that it is within human nature to present achievements to other people. This within itself combines motivation and determination due to the fact that people like to compete in all sorts of activities. As was discussed earlier the image of healthy living has become a sort of trend since 2010 therefore sharing healthy living standards and fitness related activities does not fall back in this sector.

Examining the Nike training club app for example, one can find a pattern in trendy living. Nike is a big popular sporting company therefore the appeal of its well-positioned name in the fitness market gives it an advantage above other new apps in the mobile app world. Its rise in the fashion world in 2012 also intensified the download rates. Now not only do sporty people want this app, but the target group extends to people within the fashion industry and the general public. The Nike app has been very diligent in this aspect of reaching the general public. It has associated itself with big time bloggers like Chiara Ferragni of The Blonde Salad who has been a part of making some of the videos for some of the work out sessions. Her charisma as a simple girl, and her influence in the fashion world attracts people showing that “anything is possible”. Nike used this to its advantage and started a trend of sharing more and more on the Internet and infused the people/ app sharing relationship (Ferragni, 2013).

According to Judd Antin and Elizabeth F. Churchill of the Yahoo! Group, there are social psychological motives to sharing achievements or as they call it “badges” on social media platforms. They can be looked at as “virtual goods”. In their research most data was gathered from online gaming but the results apply to almost any type of application with a sharing of achievements on social media feature. Essentially the role of badges or rewards is for goal setting. Once there is a “virtual reward’ waiting in the completion of a task, “the fun and interest of goal seeking is often the primary reward itself”. Badges can be used to heighten reputation. Once one has shown their

achievement a sort of figure behind a users interest, expertise and past interactions. By reviewing another persons badge or achievement one can get a summary of engagement levels and current state of interest. Along with the notion of respect comes the idea of status and affirmation (Antin & Churchill, 2011)

Advertising ones achievements derives from the expectation that other people are paying attention to what one is doing and that with good achievements people regard this person in a much more favorable light due to the fact that they underwent that activity. It does not have to be related to bragging, one can simply have these badges or marks of achievement on social media to remind oneself that they can do better as a trophy does. The last primary function of badges and achievement markings according to this research is Group Identification. Having something to show for what you are doing allows a group of users to communicate about shared experiences. It can increase positive group identification by showing that there is a similarity between the individual and the group. This type of group identification is very important in social media as it increases cooperation and participation (*Badges in Social Media: A Social Psychological Perspective*, Antin & Churchill). Research of the sort signifies that how these health apps have been operating and developing is very important in psychological terms. Adding social media as a feature enhances engagement on the users side and develops a bigger network for the app on the marketer's side.

7 Gym Participation

Gym participation has risen immensely from about two decades ago. As was mentioned previously in the history section of this paper, the gym and health fitness trend came to light around the 80's when people started even dressing in gym clothes outside. Today around 245 million Americans are active and there is a great desire to get in shape (Physical Activity Council, 2011). The main obstacle a number of people have is staying motivated and adapting their habits to maintain a healthy lifestyle. In contrast to a large amount of people signing up for gyms there is a substantial amount of dropouts. Usually the amount of attendants that drop out is around 44% after six months and around 27% are low users. The pie chart below presents these numbers more clearly. (The International Health Racquet and Sportsclub Association; Association, The Fitness Industry)

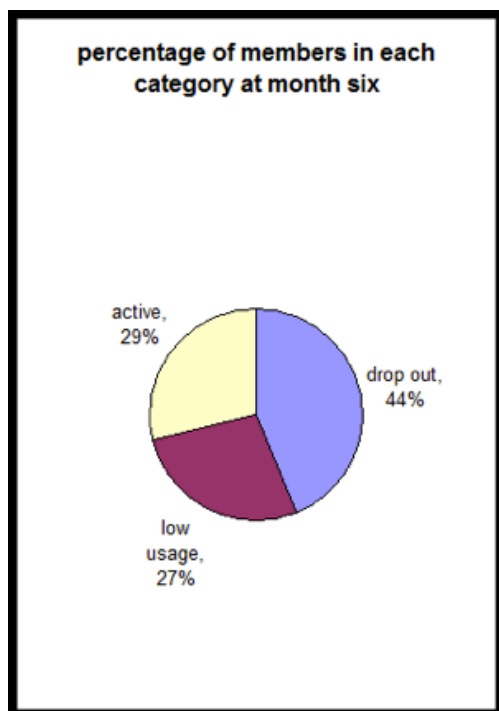


Figure 8. Gym membership after six months (The International Health Racquet and Sportsclub Association; Association, The Fitness Industry)

These numbers indicate that it has been increasingly difficult to retain members therefore gyms have been looking into technological advances for new possible routes. Attendance and retention are inherently linked. Once a club member starts

to attend continuously there is a sense of value that results from it. When they stop attending, the brain perceives it as if the club is not meeting needs and expectations any longer. The main issue usually for members is not price but rather the usage rate of the members themselves. That being the case, gym applications could motivate and bring in higher attendance rates, which in turn gives higher value to the customer. "With total membership exceeding 50 million people for the 2nd consecutive year, it is clear that the health club industry is growing to meet the needs of a more health conscious and value oriented consumer." – *Jay Ablondi, IHRSA EVP of Global Products*. Lori Patterson is a motivated woman who created her own boot camp gym application believes that all these health applications are in fact supplementing the gym (Johnson, 2012). The question she poses is do these gyms prefer to create apps of their own to match their gym (the price of creating an app ranges from \$500-150,000) or do they learn to utilize existing popular apps to their advantage? A marketing and financial analysis would be the beginning steps in the decision process of implementing a gym plus application strategy.

An app that has become quite popular and caused some racket is GymPact. It utilizes financial incentive to keep users motivated while also offering negative reinforcement to users who fail their goals. Users of GymPact make a pact each week to exercise a certain amount of days and how much money they will yield in case they miss a workout. The fee can go up to a penalty of \$50. The application uses the GPS installed in the smartphone to track the users. GymPact verifies that users check into gyms and tracks workouts being performed at home (Apple App Store). The app manages to use the smartphones' GPS capabilities and motion detection technology to its full potential. The main hook associated with this app is the fact that once the week is complete, those that met their pact are awarded a portion of the money that was paid by those who did not. Out of its current 135,000 members majority come from California, followed by New York (Wilkinson, 2013). This is where one questions how far financial incentive can really take someone?

A point that must be factored into the gym equation is gym cost. In reference to Charlie Kims research it is possible to see that there was a distinct difference between high performance and cost of a gym. Once the gym became free,

attendance rates of top performers dropped while for low performers always showed up. This was initiated by checking what would be most convenient for members, to have the gym in the office or to have a free gym membership. What the majority of non-profit gyms lack is the rising need of consumers to feel luxurious. The image of a extravagant and costly lifestyle enriches the customers experience. This outcome shows that people in the health and fitness sector are not necessarily searching for the free or cheapest option rather one that is convenient and provides outcomes.

Gym memberships are generally quite continual and cyclical. Demand is driven by factors internally and externally. This can be seen in different volumes of new memberships per season. When these seasonal increases arise in gym memberships it is no surprise due to the fact that in the spring and summer people tend to want to get in better shape and develop a healthier diet. According to an employee at Hreyfing gym in Reykjavik, the membership increases come during holiday or vacation times, mainly in January (after people have set new years resolutions) and in the summer. Another factor that drives demand is price. When low membership periods come about, a number of gyms start to offer discounts or membership deals. These discounts usually attract numerous people during non-peak sessions but they are removed or reduced when peak returns in the summer or winter.

8 Merging Gyms and Applications

There is definite demand and need for fitness motivation in people. With the great rise in obesity and limited awareness in physical exercise concepts there is a certain need for consistent exercise. Due to the fact that so many people are using smartphones and applications it is almost certain that there will be a rise in the gym memberships if the two were linked (Snorrasson, 2013). A gadget that would allow this sort of combination would be one like Fitbit. Fitbit is a device which tracks the steps, distances, calories burned and stairs climbed during the day. In the night the device measures the quality of sleep the user is experiencing and acts as a alarm in the morning. The way it works is that it tracks the data through the device, it gets updated wirelessly and the user can challenge friends and people on their social network to make the workouts more fun. The device and the app act as a lifestyle changer (Fitbit, 2013). If this kind of device were to be linked to a gym, people that are not already engaged would be newly motivated. A useful feature for physical exercise and gym application is the GPS. It allows the trainers in the gym to verify that the gym members are active outside of the gym as well. There is definitely potential and high demand for a smartphone application, which is tailored to a certain gym and its facilities.

According to a study on undergraduates' use of mobile health apps about 17% of the participants in that study reported using a health application. After calculating a chi-square goodness of fit test it was discovered that race was the most significant indicator between gender and class standing. The main reasons they stated for not having a health app were lack of interest, cost, perception that the apps were not effective or generally being unaware of their existence (Haithcox-Dennis, 2012). This is a clear indicator that a new medium and reach must be created to reach out and provide these apps to generation Y.

9 Gamification

One very important new technique utilized in the business world is gamification. It is the use of simple game playing elements in activities not related to games. The underlying idea is to use challenges, motivation and reward as a psychological “trick” to encourage engagement, in this case in physical activity. There are a number of components that fall into its success. The biological and scientific factor discusses dopamine and endorphin levels associated with game play. With a rise in these body chemicals people generally have increased feelings of pleasure and well being. In this regard, it is almost certain that if health applications were gamified (majority of which are) levels of this chemical would additionally rise to the endorphins already released due to physical exercise. The other aspect of gaming that is attractive to businesses is the fact that it engages people and motivates them to change behaviors. According to Forbes online, by 2015 approximately 40 percent of the 1000 major organizations globally will be using gamification as a primary mechanism.

“People today are seeking more reward and more engagement from experiences than ever before. The younger generation — the millennial generation and younger — is more game-attuned than previous generations.” -Gabe Zichermann, author of Game-Based Marketing and CEO of Gamification.co,. Since gaming appeals to the younger generation to such a high extent it should be regarded as a very strong tool in exercise motivation. Referring to the figures presented earlier in this paper the number of inactive people in America is quite large which is a contributor to the obesity levels of the younger generation. Seeing that fitness already includes athletics and a certain competitive attribute, implementing gaming into fitness is almost natural. The same goes for health and fitness applications. The idea behind the a big bulk of fitness applications is to set it up like a game where the more effort you put forward to reach goals the more room for advancement there is available. One application called Fitocracy indicates that this is the case while the community around the application is what locks people in and enables continuous usage (Apple App Store).

An interview was conducted with Sameer Gulati who used to work for Zynga, one of the largest providers of social game services. He believes that gamification is the main source of engagement for Generation Y in health and fitness smartphone applications. When asked about the influences of monetary rewards Samir pointed out that according to one of their researches monetary reward had effect in the initial stages of the games but as time and efforts progressed people simply got disengaged. Some disengaged players in a planting game showed a pattern where once they missed a couple of sessions playing there would be a overload of information upon their return. For example, in one of the games players would have to plant and feed their plants each day. Failing to do so would result in bad crops and in that case a ruined field. After having missed several days when a player returns they do not want to continue with a ruined crop or field therefore they disengage or start a completely new game (Gulati, 2013). Through this is it possible to see that negative reinforcement is not the best option for smartphone applications. This poses a question regarding monetary rewards and negative reinforcement, is it smart for a health and fitness app to use it?

On the other hand, the common idea of a person working an office job and sitting at a desk all day needs something, which motivates and indicates daily movement in a non-intrusive manner (Herger, 2013). Gamification facilitates this by making the activity and program more fun and essentially all goals attainable. The appeal of gamification can be linked to all sorts of people. The app mentioned previously called Zombies, Run! embraces components of gamification to a large extent. The user goes through a game set up to escape zombies. Music from the users playlist is used and speed is taken into account to measure how far away the “zombies” are. According to the app you are a runner that is trying to save the world by picking up supplies. Using this element of imagination and humor appeals to a wide demographic and makes the workout so much more enjoyable. Concepts of the sort are the ones that gather a large and loyal fan base.

The literature review provided a round explanation of Generation Y habits and possible routes to take for successful health and fitness applications. From using

gadgets like Fitbit, having competitions within the app like Nike and using gamification to motivate a healthy lifestyle to understanding patterns of gym memberships and analyzing possible incentives, there is enough information to conduct primary research with the aim of applying Generation Ys health and fitness application usage habits to have supplementing gym memberships for that group.

10 Results (includes 10.1, 10.1.2, 10.1.3)

In this section of the paper the research results will be presented to answer the research question. The purpose of the research was to investigate generation Ys usage of health and fitness applications. The secondary purpose was to apply information from the health and fitness applications to gym locations and look at the responses of Generation Yers on the reaction of the two combined. The route used to gather information and what measures were used is discussed along with the discussion of the results and the conclusion.

A survey was appropriate for the primary research because it gathered data, which was less qualitative than conducting a focus group and it gave room for a much wider sample group. It was also very inexpensive and represented the characteristics of the population in a relatively precise manner. The survey was written up with the intention of getting a clear picture of Generation Ys perspective. Convenience sampling was the sampling method selected because the interviewer changed locations. Convenience sampling is also one of the fastest manners in getting the data due to its simplicity. The questions were prepared in advance and were narrowed down to twenty, which represented what the research essentially focused on. Since Generation Yers are not people who like to spare much time cutting it down to fewer questions was vital. The questions were made to be in their simplest for so as to avoid confusion. The questionnaire was tested on a small group of 5 students in the University of Iceland and the outcome was relevant. The estimated number of participants was 200. There were 187 respondents but 24 of them were not Generation Y (which is the generation being researched) and 36 people did not have a smartphone or access to health applications (of which 21 were

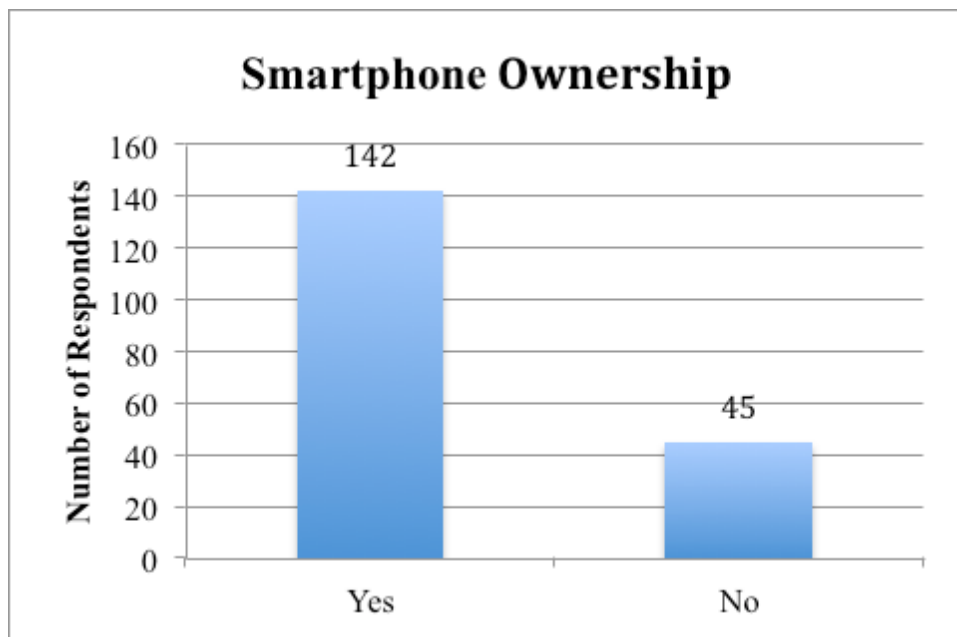


Figure 9. Do you own a smartphone?

Therefore these respondents were not included in the statistical part of the research. The first three questions addressed the participant's gender, age and smartphone ownership. These were the gateway questions to manage the results and narrow down the outcome. The majority of the respondents were females as can be seen in the chart.

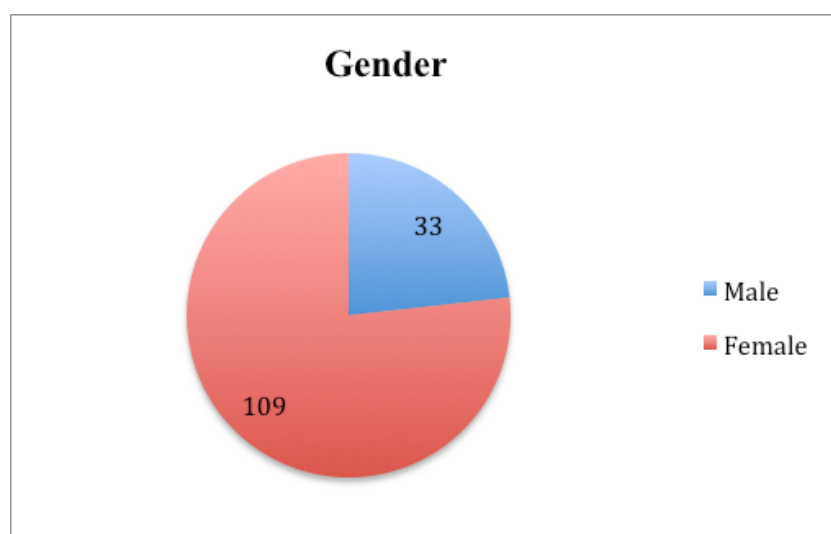


Figure 10. Gender breakdown

As was mentioned before, the number of respondents decreased from the initial 187 to 142 though the accuracy of the data increased. The focus was put on the people between the ages of 16 and 35. After the gateway questions the direction of the questionnaire changes to gym usage and routine. After question 6 the focus ultimately is on health and fitness applications and any sort of merging associated with it in the later part of the survey. After having sent out the survey it was accessible for two weeks from July 17th 2013 to July 31st 2013. The questionnaire in its entirety can be found in Appendix 1.

10.2 Statistical Analysis

Once all the information was gathered, all the data was transferred into Microsoft Excel where graphs and descriptive statistics were created. For the statistical analysis SPSS (Statistical Package for the Social Science) was used to identify correlations, measure strength of relationships and create a bivariate test. The normal distribution was set from the data and cross tabulation was used to see a link between variables. The chi-square test was used to check for the strength of the relationship between variables and the significance of the data. While the Pearsons test was used to reveal the correlation and its strength.

10.3 In-depth Questionnaire

10.3.1 Question 4

How many times a week do you go to the gym?

The goal of this question was to determine how active the participants are currently in their workouts. The question offered four alternatives, which can be found in the figure 10. The 69 participants said that they attend the gym two to three times a week. This was the majority of the participatory group. Second came zero to one day a week that was relatively close with four to five times a week.

Seeing that the least amount of people go six to seven times it is evident that they would be in need of health and fitness applications the least.

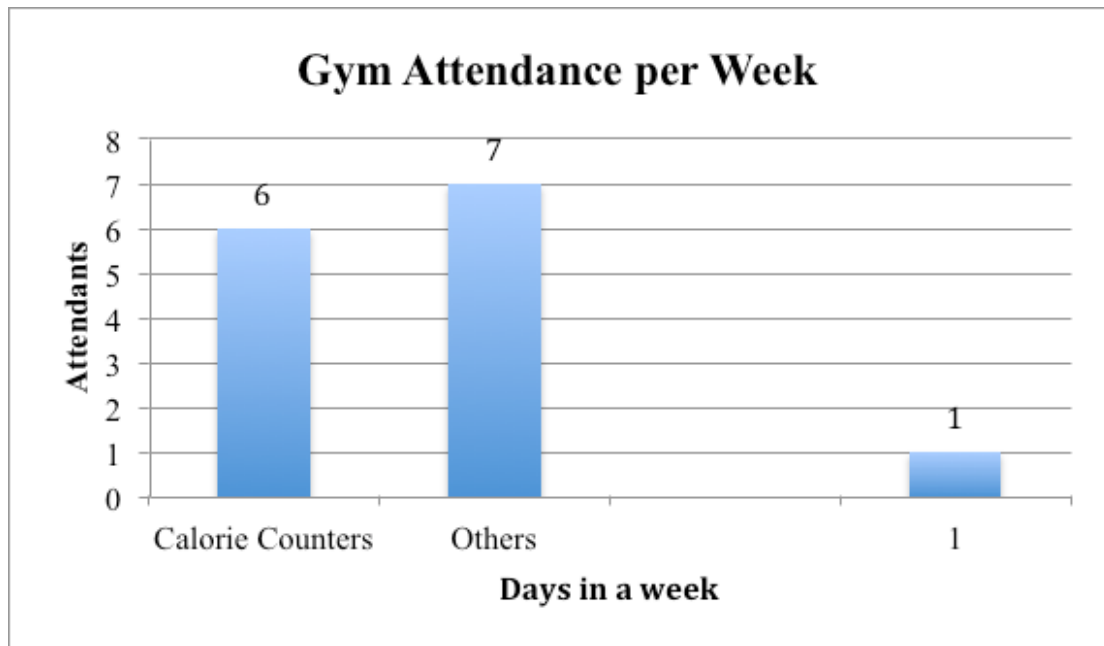


Figure 11. Gym Attendance per week

10.3.2 Question 5

How long have you maintained this routine?

The main goal of this question was to establish how active and diligent the participants were. 0 to 5 months was the most popular choice in this question, this could be linked to the cyclical features of a gym mentioned earlier by one of the Hreyfing staff. Respondents who have maintained a routine for the gym more capable of creating a program and motivating themselves rather than those that have maintained a routine for a shorter amount of time simply due to experience. Health and fitness applications that are tailored for beginner to master level users have most success in this industry because they appeal to different groups of physically active people.

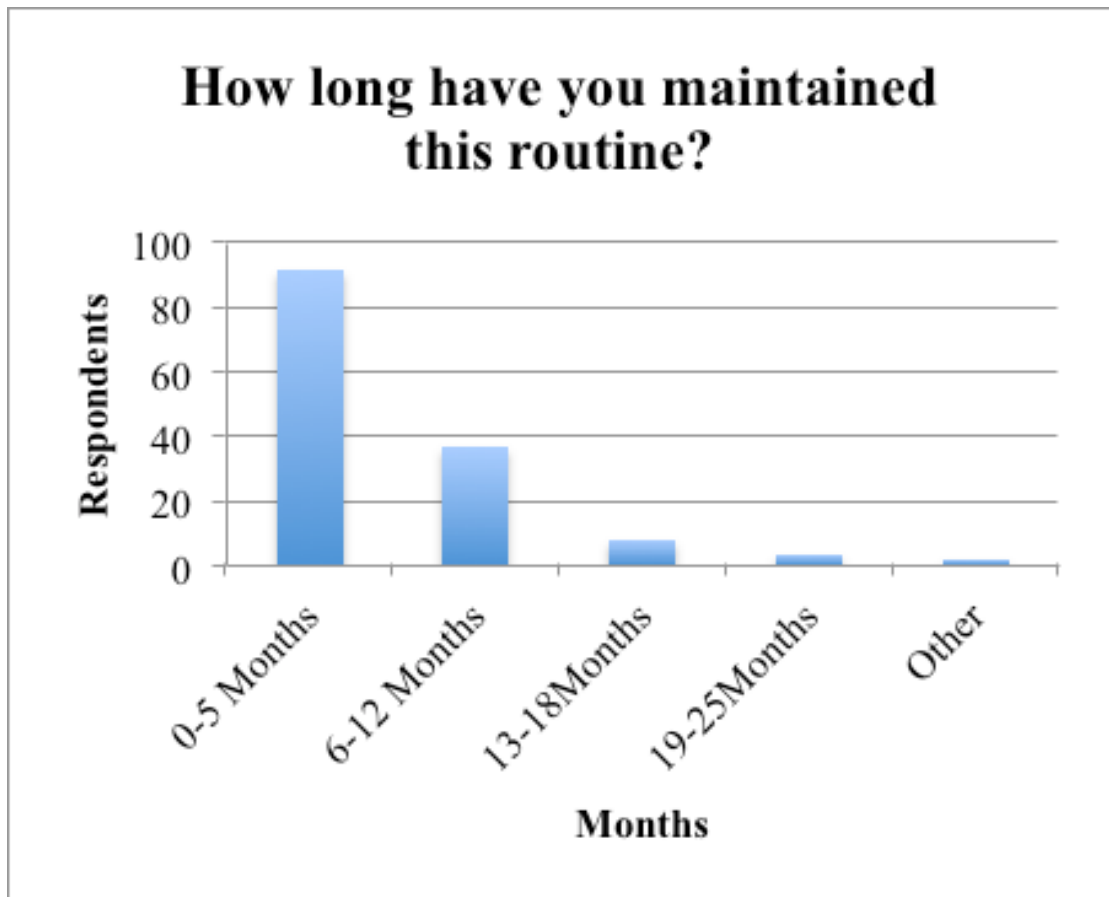


Figure 12. Routine Maintenance

10.3.3 Question 6

Are you currently using any fitness/health applications?

The aim of this question was to eliminate respondents without health and fitness applications to narrow down the research. According to the results there was not a big change between the number of people who had smartphones and the number of participants with health and fitness applications.

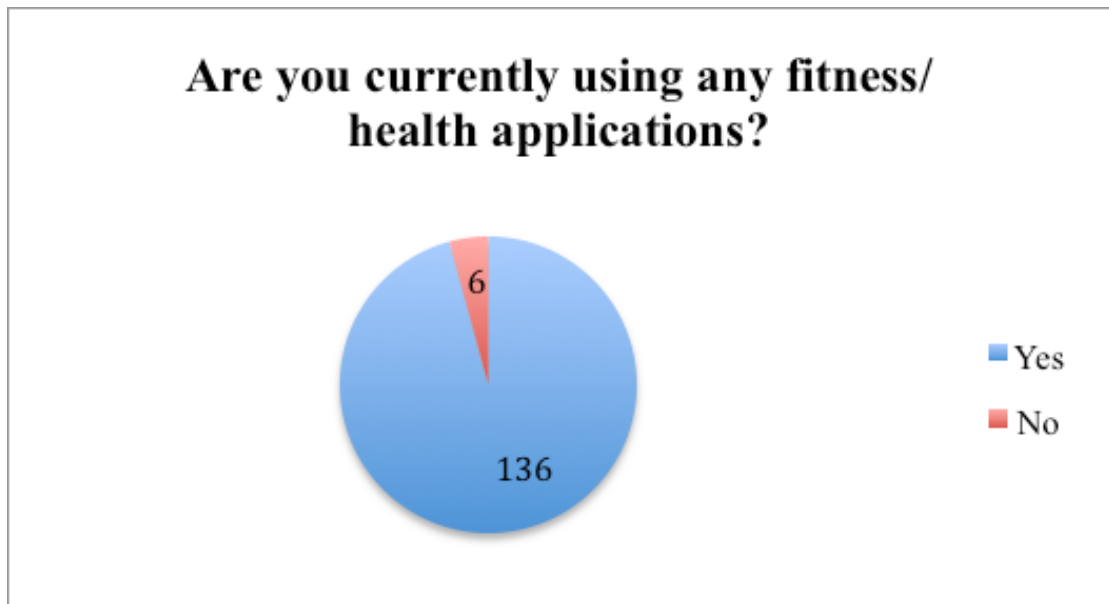


Figure 13. Usage of Health and Fitness Applications

A cross-tabulation was created for health application usage between genders in generation Y. Since there was a considerably larger amount of female participants than male the data could be considered skewed. According to the cross tab found in Appendix 2 it is possible to see that 107 females said yes to using an app while only 2 said no. In comparison 29 of the male participants said yes and 4 said no. From this data it is possible to deduct that more Generation Yers have health and fitness apps rather than not.

Note: Since the sample has reduced from 142 to 136 participants of generation Y, with a smartphone, and with a health application the new sample size will be used to calculate any statistical data for questions focusing on participants who already have a health and fitness application.

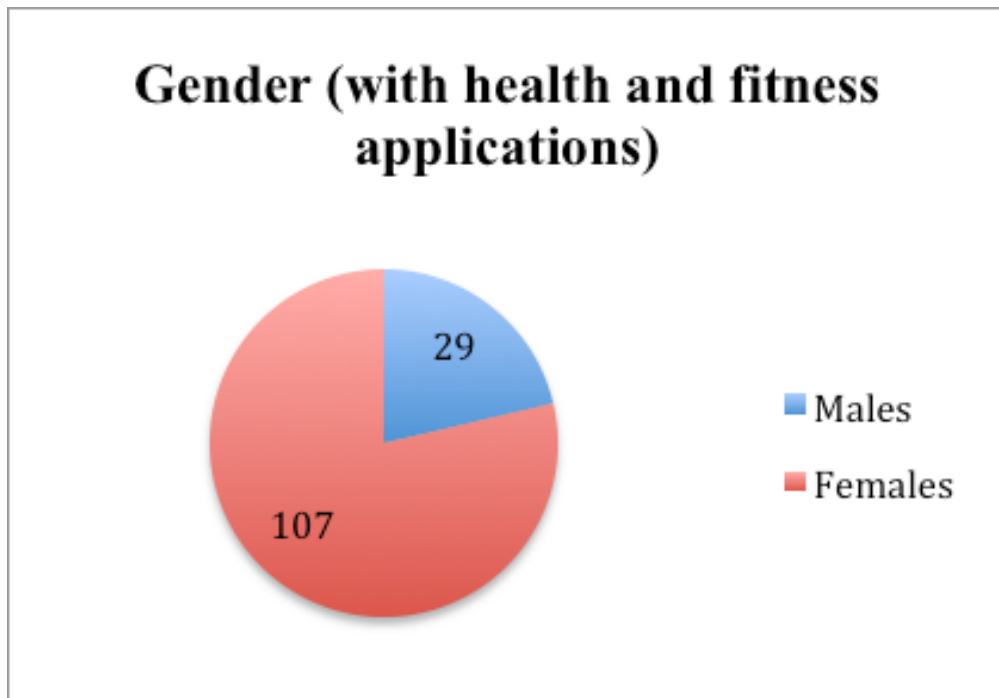


Figure 14. Gender of respondents with health and fitness applications

10.3.4 Question 7

Indicate what type of application in the health and fitness category you are using the most? (Skip this question if you do not use health and fitness applications)

The multiple-choice options for this question were weight loss, bodybuilding, motivation, yoga, calorie counters, nutrition or others. These categories were chosen because of their popularity in the Apple app store. Weight loss was the most popular type of application and the responses from this survey verify that. Generation Y has chosen weight loss applications over any other health and fitness application out of the options. The responses are presented in pie chart form in figure 13. The odd thing to notice is how not a single participant selected bodybuilding. This could be due to many factors including the body builders more experienced and knowledgeable regarding the subject therefore they would not seek out an application in search for help.

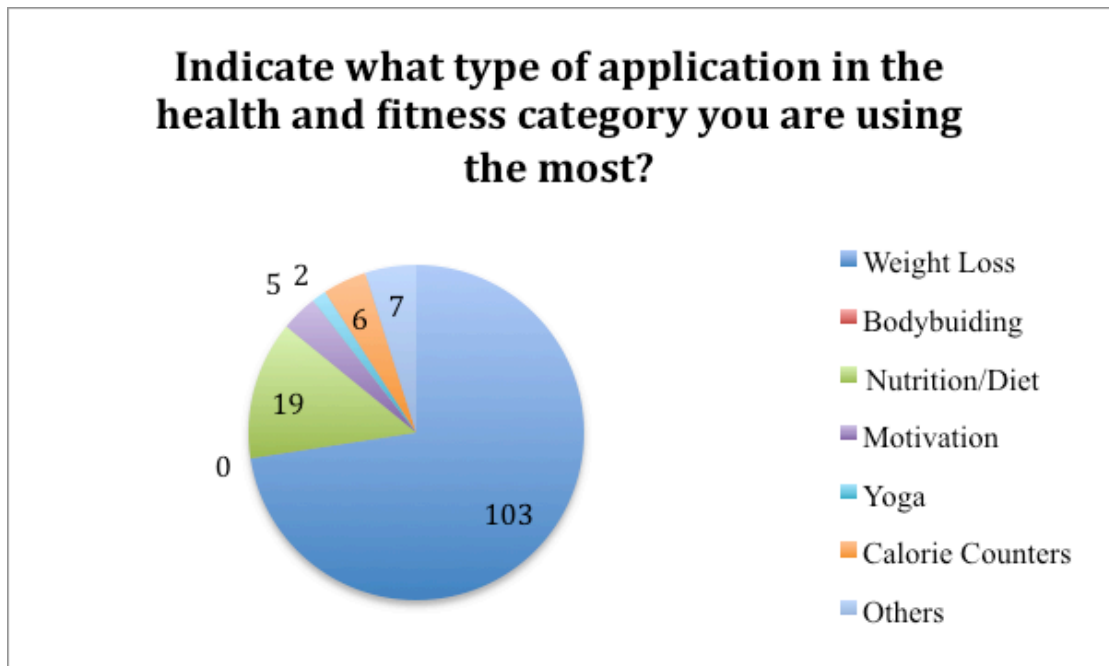


Figure 15. Breakdown of types of applications used

One of the studies mentioned earlier mentioned that the majority of the respondents were using the apps for dieting, fitness and weight loss. More than two thirds of the respondents openly stated that the primary use was increasing physical activity and weight loss (Haithcox-Dennis, 2012). These results support this statement. When the one-way ANOVA test was run through SPSS, there was no significant difference between gender and types of applications chosen. The significance came to .731, which is substantially higher than .05 therefore this result can be accepted. Since Generation Y is respectably more liberal and equal in gender than previous generations, the fact that gender does not make a difference in preference is confirmed.

10.3.5 Question 8

How would you rate the apps you were referring to in the previous question (on a scale of 1-5 with 1 being poor quality and 5 being excellent)? (Skip this question if you do not use health and fitness applications)

This question was made to be quite general in gaining perspective into how Generation Y views health and fitness applications they have dealt with previously.

Since there is a rise in application types and they have come out to be profitable then some applications are appealing to this generation accurately. Majority of the respondents gave their applications a grade of 4 on a scale of 1 to 5, which is a relatively high grade. It would have been too time consuming to ask them to rate all applications they have ever dealt with in the health and fitness application category therefore only the ones they had in mind in the previous question were referred to. Since those were the applications they thought of they are the ones who have left an image and value in the users head. The graph in figure 14 also indicates that very few respondents graded these apps negatively. That raises the question whether they were too generous with their grading.

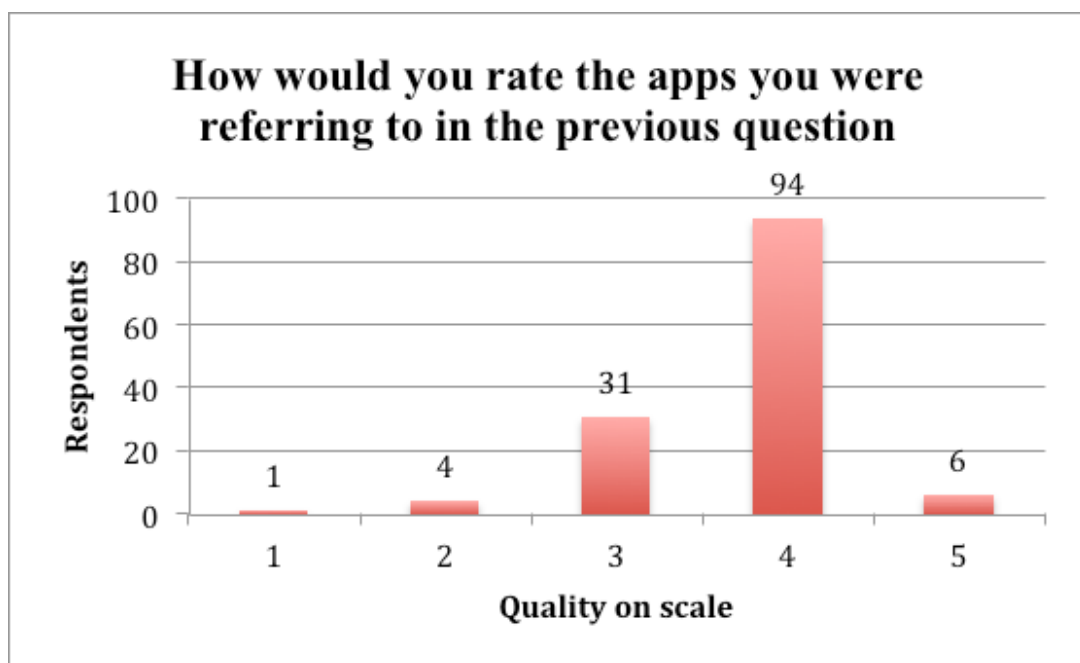


Figure 16. Rating of health and fitness applications on a scale of 1 to 5

10.3.6 Question 9

Indicate which app is your favorite and which category it belongs to (Skip this question if you do not use health and fitness applications)

This was the only question, which gave the respondent an option to select any application they wanted in the health and fitness category. The goal of this question was to give space to applications that have not been considered before or even

categories, which have potential to be developed. Out of the 136 respondents 41 said that their favorite app was either Nike Training Club, Nike+, Nike fuel band and Nike motivation apps. This was not surprising due to the information given about Nike earlier in this paper. Other answers ranged from calorie counting apps, Zombie! Run and some small independent applications that have not caught the hype in the app store. Oddly, no respondent indicated a new category. This could be due to the fact that through-out the entire survey they had been focusing on the ones presented to them or due to the fact that these categories simply appeal to Generation Yers to a greater extent.

10.3.7 Question 10

If you have not used any fitness applications, do you believe you would be more motivated with one?

The nature of this question was two fold; to see if there was a desire for health and fitness applications amongst people who do not have them at the moment and to see if respondents believe they would be more motivated with an application of the sort. One could mention the placebo effect in this case to further a person in attaining their goals through an application. If the respondents feel that they will be motivated, they essentially will be for a certain amount of time after which the app would need to take over that factor. Surprisingly, all 6 respondents not using the health and fitness applications answered yes on this question. This verifies what was discussed earlier regarding there being demand for health and fitness applications.

10.3.8 Question 11

Has the app made you more physically active/ aware of your nutrition or calorie intake? (Skip this question if you do not use health and fitness applications)

The goal of this question was to check how the apps the respondents already have are working out for them. Majority of the responses were yes which indicates that there is a positive effect of acquiring the app and become more active or aware of nutrition. Since the entire group did not respond with a yes it is not safe to

assume that this is entirely due to the apps but could be numerous factors. The pie chart below shows the breakdown of the responses gathered.

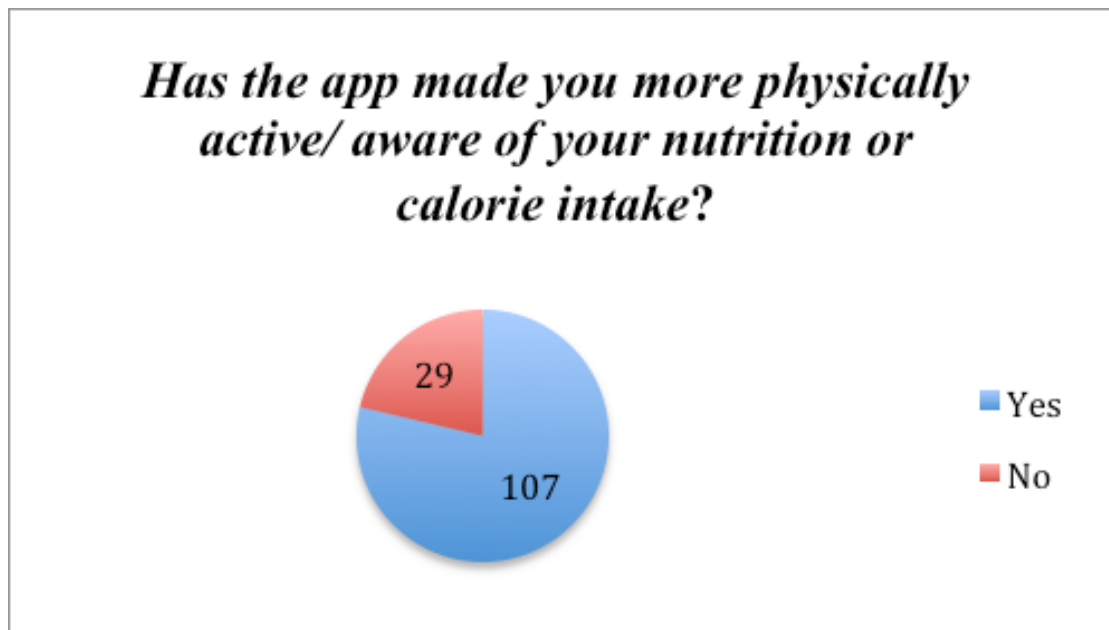


Figure 17. Have the activity rates risen since acquisition of the app?

After a cross tabulation was conducted, the value for Chi-square was found to be 18.545 and the significance value is .002 meaning the type of application preferred and used has an effect on rising physical activity levels relating to the application acquirement. Since the respondents gave an answer to which app they preferred this was inevitable because those are the apps that keep them motivated. The breakdown between types of applications and physical activity level rises are presented in the cross tabulation in Appendix 2.

10.3.9 Question 12

Do you always use the app as intended? (Skip this question if you do not use health and fitness applications)

This question was aimed to determine to what extent the application is being used. It addresses possible problems the user might encounter that ultimately create a negative response. For example, if a person uses a calorie counting application they expect the app to allow them to input data with ease and rapidity. One of the

main observations in this data was the number of people not inputting information into the application, which in turn does not calculate accurate data on the person and essentially not working to its full potential. 120 respondents out of the 136 with health and fitness applications did not input their results or habits on a regular basis. This in essence means that the satisfaction level of each of these respondents is below its peak due to lack of motivation or glitches of the application. The answers can be found in the chart below.

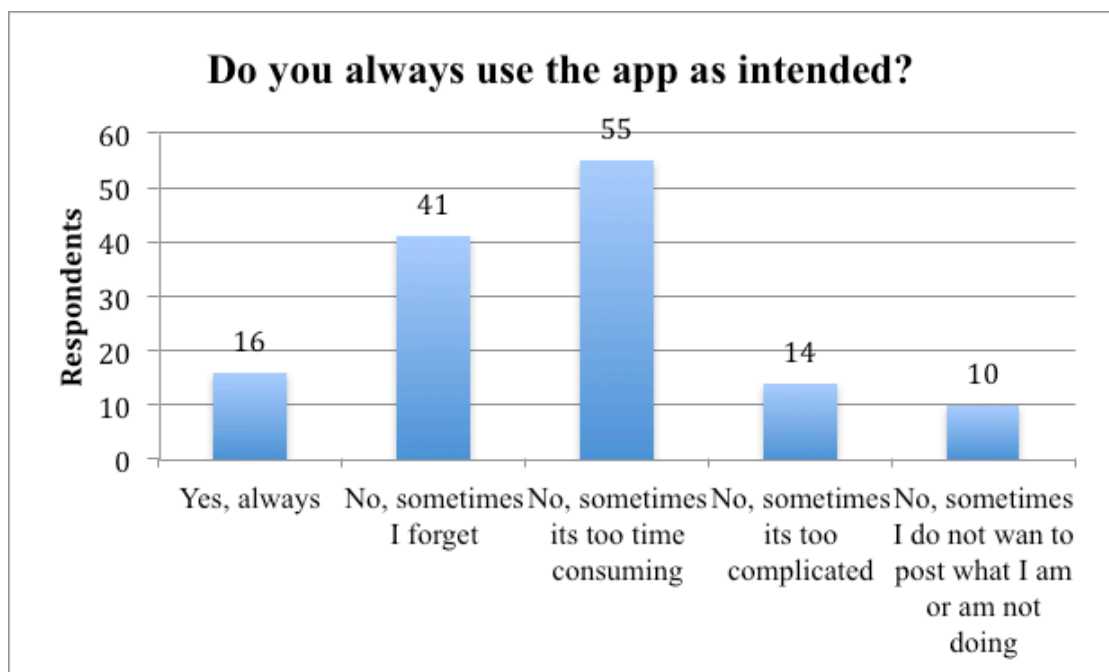


Figure 18. How is the app used?

Since the chi-square test measures the strength of the relationship between variables, it was used to recognize the significance of this data. The variable used against this question was the increase in gym attendance after app obtainment. The chi-square value was 11.963 which is quite high and the significance for degree of freedom 4 was .018. This value is below .05 therefore we can reject the null hypothesis stating that usage of the app and increased attendances at gym have no impact on each other.

10.3.10 Question 13

Do you use the social networking feature in the apps to share your progress? (Skip this question if you do not use health and fitness applications)

Having discussed social media and its importance to Generation Y in detail earlier in this paper, finding out if the social networking features in health and fitness applications was obligatory. After having reviewed several health and fitness applications the sharing on social media feature is difficult to miss. The three main aspects in social media for applications are sharing, competing and profile set ups. It is a marketing move all these applications embrace and push at the customer.

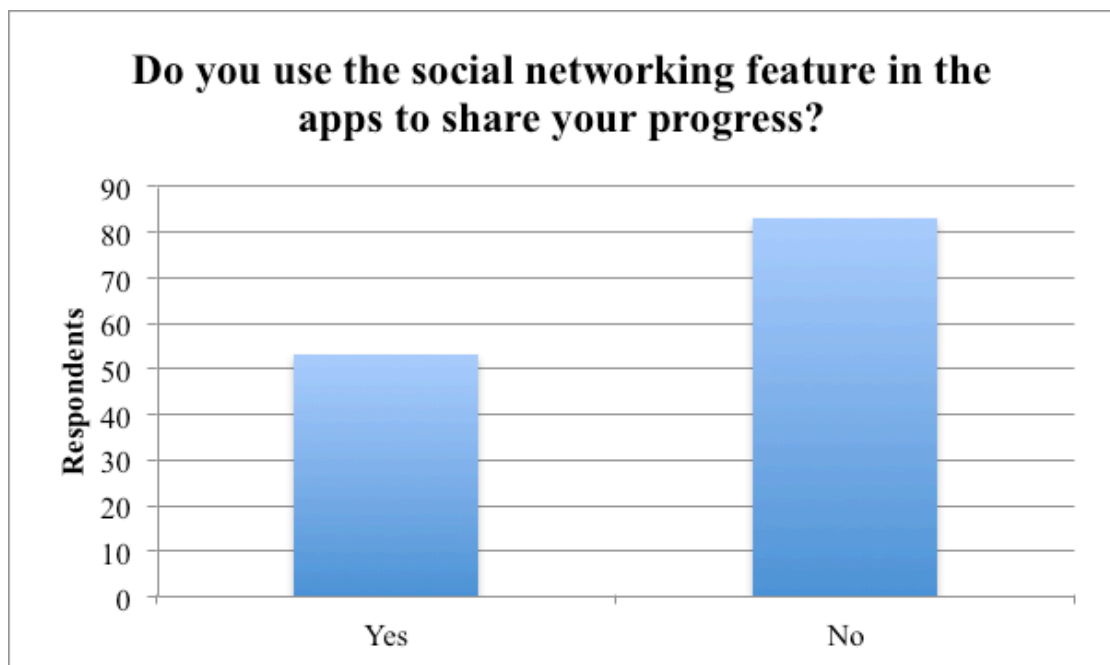


Figure 19. Social Media utilization in health and fitness applications

According to the Pearson correlation coefficient there is a positive weak correlation between the question asking whether social networking was used to share progress in the application and gender. With a significance of .327 there is no significant correlation between sharing on social networks and the gender of Generation Y.

10.3.11 Question 14

What do you believe is a reasonable price for a good health and fitness application?

This question connects to previously mentioned price ranges generation Y is trying to remain in. Since smartphone applications do not have a high price standard the price ranges do not vary greatly. According to the results most Generation Yers prefer the app to be free (81). This number greatly exceeds any other price range. The answers can be viewed on the graph in Figure 18.

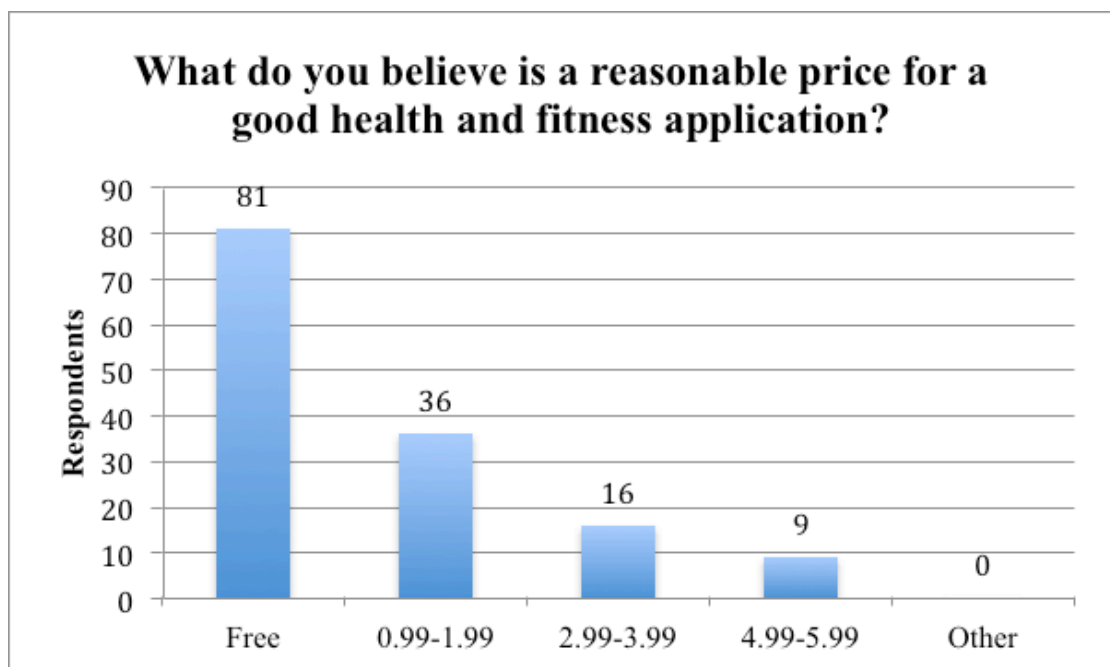


Figure 20. Health and fitness application pricing

According to the independent samples t-test, found in Appendix 2, there is no significance in comparing gender with price for Generation Y. Significance was found to be .201 therefore by reading the second line the t value is -.456 and the significance value is .650, which is larger than .05 alpha. The weight lies heavily on free health and fitness application therefore that will always overpower a priced good.

10.3.12 Question 15

Have you started to attend the gym more often since you acquired a personal training/ weight loss app? (Skip this question if you do not use health and fitness applications)

The intention of this question was to find out whether gym attendance increased once the respondent acquired a health and fitness application. The question focused on personal training and weight loss mainly since these two sorts of applications encourage gym the most of the options offered in the earlier question regarding preferred type of health and fitness application. Calorie counting and nutrition apps were excluded since they encompass what one consumes rather than physical exercise and bodybuilding and yoga were excluded due to their lack of popularity in the app store category. The pie chart in figure 19 presents the results.



Figure 21. Gym attendance in relation to health and fitness application

Once the Pearson Chi-Square test was conducted the value came out to be 12.459 and the significance (p value) was .029. Since the p value is below alpha .05 this data is significant meaning that the type of app the respondents chose was correlated

with the results from using the app. According to this, it is possible to deduct that the applications used the most by the respondents had a significant effect on gym attendance after acquisition of the app.

Though when a cross tabulation was performed on the gender variable the significance resulted in .765. Meaning the progress with health applications in generation Y is not dependent on gender. Looking at the regular gym attendance per week and the almost equal amount of respondents saying yes and no on this question shows that health applications do not influence gym attendance to a huge extent. The type of app is what causes the difference.

10.3.13 Question 16

Which of the following factors would motivate you the most to reach your goal?

The goal of this question was to see which of the factors mentioned would motivate the respondent to reach their goal in physical activity or healthy living. The multiple-choice options were financial reward, competitions, results shared on Facebook/twitter, gamified sport apps or other. Most of the respondents answered with competition. According to the figures in the cross tabulation presented in Appendix 2 for this question males mostly preferred competition as a motivational tactic whilst females preferred financial reward or punishment. According to the chi squared test gender plays a significant role in this variable. The chi-square value came out to be 13.552 and the data had a significance value of .009. The chart in Figure 20 presents all the results. Competition and financial reward/punishment had a similar amount of preferences while shared results on social media only motivated one person.

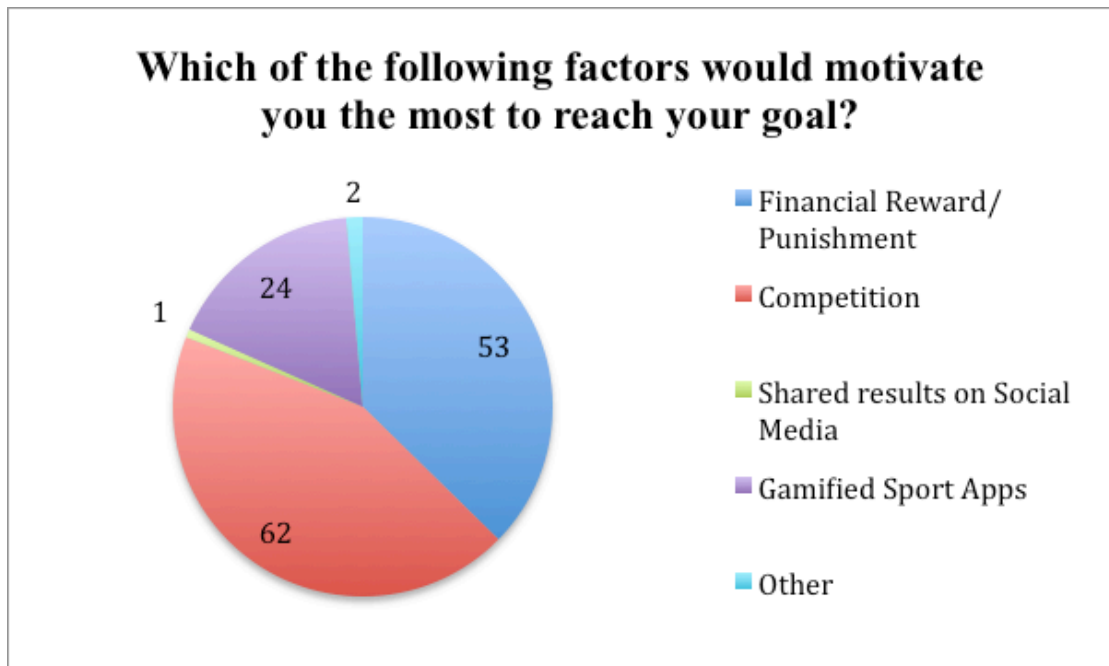


Figure 22. Motivational factors in health and fitness applications

The cross tabulation in Appendix 2 suggests that those respondents who use the social networking feature of the apps prefer either financial reward or competition in comparison with minimal amounts for other motivational tools.

10.3.14 Question 17

What are your thoughts on GPS exercise games? (Having a tracker follow your progress)?

The purpose of this question was to see whether the participants believed that a tracking device in their phones was not a viable gadget to verify physical activity. It was very interesting to see the difference in age groups and the reactions to this question. Almost every person in above 35 had negative reactions to this while people in generation Y and younger believe this is a magnificent concept. Also one interesting factor was the location the survey was taken in. Out of the 20 people who were interviewed in Iceland 18 said they would not feel comfortable with a GPS tracking their activities, while on the other hand about the majority of the online survey participants in the United States had positive reactions regarding this system. This would be an interesting focus for further study.

The chart below represents the possible responses and the amount of pattern of opinion. The respondents' reaction was mainly either positive or impartial.

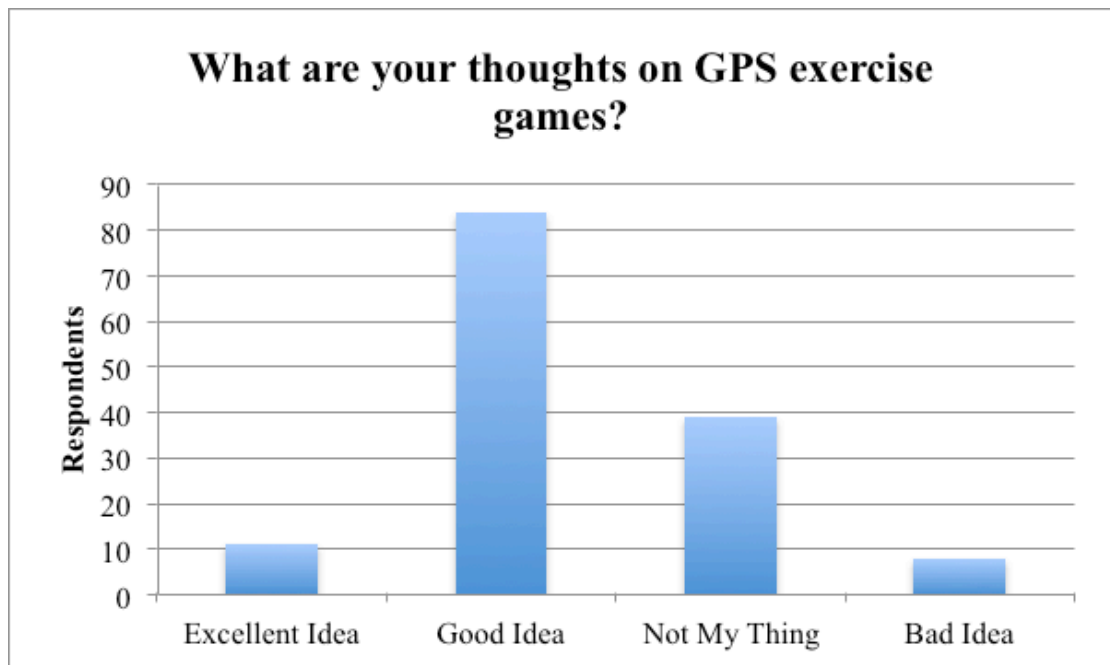


Figure 23. Respondents' opinion on GPS trackers for exercise games

Many applications are implementing a GPS using system to track people's activity. According to this data Generation Y actually finds this to be a good idea therefore this is an aspect that can certainly be taken care of.

10.3.15 Question 18

Do you feel an app is a good replacement for a real personal trainer?

Considering the speedy rise of technology it was necessary to question Generation Ys idea of human interaction or speedy mobile help. The question was set out to determine if personal trainers are expected to be redundant. Figure 22 presents the responses.

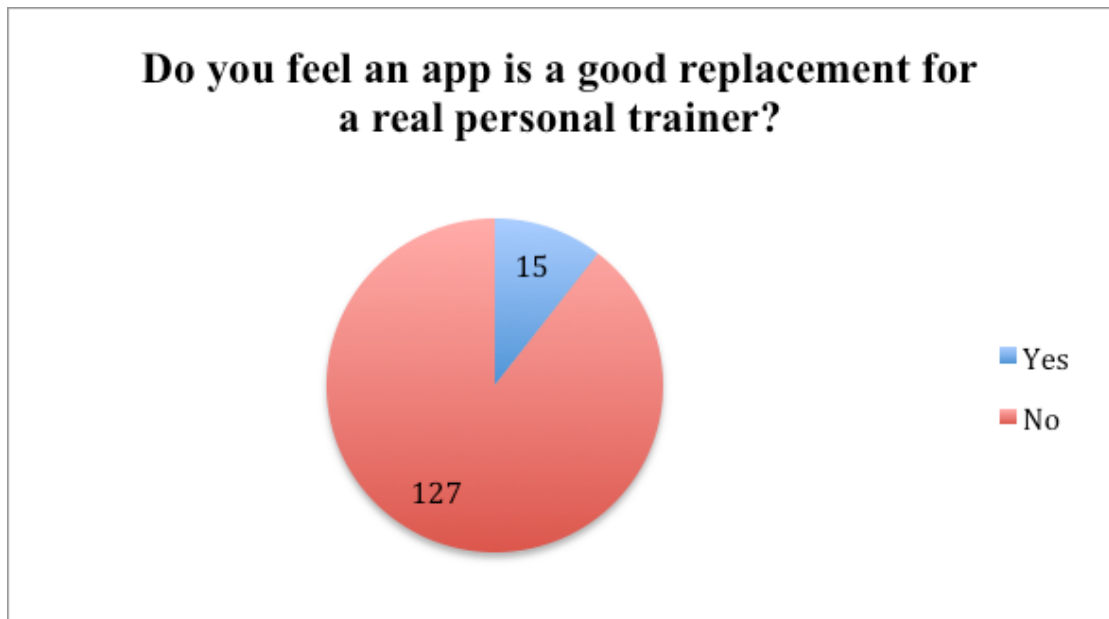


Figure 24. Respondents' opinion on human trainers vs. application

The majority of the respondents did not consider an app to be a good replacement for a real life personal trainer. The cross tabulation in Appendix 2 shows that greater difference between female responses existed rather than male. The Pearson Chi-square value was 6.454 and the significance equaled to .011 which is below alpha .05 therefore the null hypothesis can be rejected stating that preferences in human and app trainers are not skewed by gender in Generation Y. After having spoken to the staff in Hreyfing they had specified the same result. This sample is an indicator that numerous opinions point to the fact that human personal trainers will not be redundant in the near future.

10.3.16 Question 19

Do you search for new developments in this sector/ with further improvements would you consider downloading more of these applications?

The goal of this question was to make sure there is still a growing interest in the development of health and fitness applications. According to the data presented below there is still an interest in this category. The cross tabulation in Appendix 2 provides a breakdown of the answers according to gender. There are far more males

within their ratio answering yes (30) compared to no (3) while the female responses seem less engaged with 84 Yes's and 25 Nos.

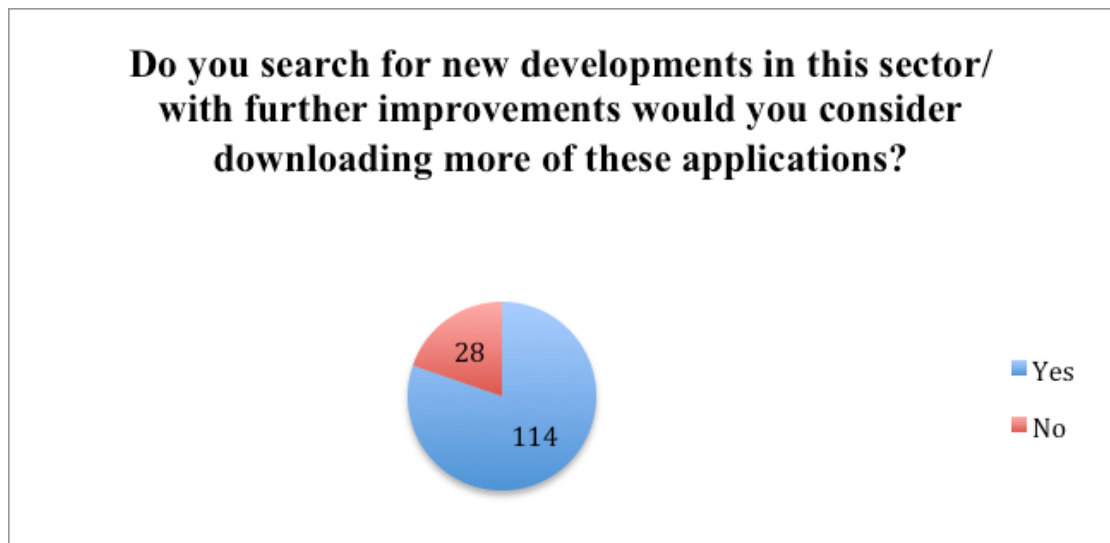


Figure 25. How interested are the respondents in getting new applications

A Independent samples t-test was conducted to see how future downloads, application users, and people who believe there have to be real personal trainers are associated. Since the significance under Levene's Test of Equality Variances is .010 which is less than .05 the second row was taken into account. The t value in this case is 2.506 and the significance is .014, which mean that it is possible to conclude that there is a statistically significant difference between mean number of application users and future downloads.

11 Discussion

Physical exercise and smart phones have developed to a big extent. There is only room for more improvement and advancement from here on it. The results from this study show that the health and fitness mobile application category is rising steadily and relevant demand still exists. It is possible to deduct that the majority of apps being downloaded by Generation Y consumers are in the weight loss and nutrition category. This result was not influenced by gender or preferences on pricing. Of the 136 relevant participants majority believed health and fitness applications should be free. The study previously mentioned in the literary review indicating that Generation Y is not in the high paid bracket yet supports the findings. At the same time a large group did not use the app as intended and believed that it was too time consuming to input all the information regarding their exercise or diet. This could be linked due to the fact that if the application is not being used to its potential then satisfaction levels are lower and in result the respondents believe the apps should be free. Almost the entire sample believed apps should not replace human real life personal trainers and this number was not skewed by gender.

After a statistical test was conducted on physical activity rates increasing after acquisition of a health and fitness linked with the types of apps, it showed there was a positive association between the two variables. One interesting finding was that only one person preferred shared results on social media as their main motivational factor. Since the results from question 13 on social media indicated that there are a number of people who do share on social media it means that only one of those respondents actually used it for motivation. Since there was such a large number of a preference of competition as a motivational factor, it could be related to status creation on social media or gender since biologically men are considered to be more competitive than women. These results indicate that there is big potential in reaching this generation to increase gym memberships. Using technology and appealing to the right motivational factors is the main feature to locking them in.

12 Limitations of the study

There are several limitations each study possesses. Some of the major limitations encountered in this study were of finite secondary research on healthcare and fitness mobile applications and of data collection. Generally more information can be retrieved on the application list or specifically on gaming and utilities. The information on reward systems online and on smart phones is linked to games since it is the biggest sector of the app store categories.

A part of the study was conducted in person (20 people) and the rest was gathered through an online survey source. This might have skewed the data in some manner. True opinions may have been withheld since the questions involved personal achievements and physical health. Perhaps the participants did not want to be too candid; they may have been trying to conceal the fact that they had cheated the app or have not been exercising regularly.

The size of the sample was the most limiting factor since there were only 142 respondents, when initial expectation was at least 200. There is a possibility that there were too many questions therefore the participants felt overloaded. On the other hand the amount of data gathered served a good purpose. It could have been longer but it would have made it be a deterrent.

Sampling was slightly biased since it was gathered in two different countries. The in-person questionnaire was conducted in Iceland and the majority of the online survey was of people in the United States of America. A more expansive sample that includes a better balance of location breakdown of participants, would aid in the generalizability of the results.

13 Conclusion

Health and fitness applications for the smart phones are very rapidly emerging as an alternative for implementing healthy living and diminishing unhealthy standards around the United States of America. Since this topic is relatively young there is not a great deal of information regarding its development on the web, especially regarding people of Generation Y. According to numerous resources young adults of Generation Y consider mobile application and Internet usage as a second nature skills. According to the results gathered in this data majority of the Generation Y participants had been using a smart phone and health and fitness mobile applications.

This paper was aimed at applying the use of health and fitness application trends of generation Y to further and increase health club memberships. Through the literary review innovative methods were discussed about applying health and fitness applications to gym usage. The main concepts included using GPS, financial incentive, extra gadgets, gamification and real life situations to appeal to Generation Y. Through the primary research the preference in weight loss applications for generation Y was established along with this the pricing possibilities were outlined. A number of respondents found that GPS usage was a good idea therefore gyms can implement this to create motivational and reward systems. Through the findings presented in this study, health clubs can utilize their opportunities and expand to either creating apps themselves or using existing apps to their advantage.

Application developers and businesses alike should be aware of these features since their consumers are far pickier and information oriented than ever before. Simply creating a good application does not work anymore. In this day and age it is crucial to attract the consumer to you and lock them in to make them loyal consumers for a long period of time. Competition in this sector has also risen rapidly within the past decade therefore it is crucial to remain up to date in technology and trends while also not losing sight of what we are all essentially looking for, a healthier lifestyle.

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15 Appendices

15.1 Appendix 1

Healthy Fitness Through Smartphone Applications

Do you use a smartphone?

-Yes

-No

Gender:

-F

-M

Age:

-15-24

-25-34

-35-44

-45-54

-55-64

65 and over

How many times a week do you go to the gym?

-1

-2

-3

-4

-5

-6

-7

Other:

How long have you maintained that this routine?

-0-5months

-6-12 months

-13-18 months

-Other

Have you ever used any fitness/health apps?

-Yes

-No

Are you currently using any fitness/health apps?

Circle what type of apps you use:

-Weight loss

-Bodybuilding

-Motivation

-Yoga

-Calorie Counters

-Nutrition

-Other:

How would you rate the apps mentioned in the previous question (scale 1-5)

Do you believe apps of the sort produce results?

-Yes

-No

If No, could you please indicate shortly why?

Indicate which app is your favorite?

If you have not used the app, do you think you would feel more motivated with a fitness app?

-Yes

-No

Have you been more physically active since you acquired the app?

-Yes

-No

Do you use the app as it is intended

-Yes

-No

Do you believe social networking should be connected to these apps?

-Yes

-No

Which of these factors would motivate you to be more physically active:

-Financial Reward

-Competitions

-Results shared on social networking sites

-Goal attaining apps

Other:

Have you attended the gym more since you got the personal training app?

-Yes

-No

How did you find out about fitness apps?

What would be the most convenient way for you to discover the apps?

What do you believe is a reasonable price for a weight loss smartphone application?

Free

\$0.99-1.99

\$2.99-3.99

\$4.99-5.99

Other:

What are your thoughts on GPS exercise games? (having a tracker to make sure you are exercising)

Do you feel this is a good replacement for a real personal trainer?

-Yes

-No

Do you believe this development in the smartphone industry to be a positive step in the right direction?

-Yes

-No

15.2 Appendix 2

Question 6

q2gender * q3appuse Crosstabulation

Count

		q3appuse		Total
		Yes	No	
q2gender	Female	107	2	109
	Male	29	4	33
Total		136	6	142

Question 7

Descriptives

Typeofapp

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Female	107	1.71	1.566	.151	1.41	2.01	1	7
Male	29	1.83	1.834	.340	1.13	2.53	1	7
Total	136	1.74	1.620	.139	1.46	2.01	1	7

ANOVA

Typeofapp

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.314	1	.314	.119	.731
Within Groups	354.157	134	2.643		
Total	354.471	135			

Question 8

Between-Subjects Factors

	Value Label	N
q12intenuse 1	Yes, Always	16
2	No, sometimes I forget	41
3	No, sometimes its too time consuming	55
4	No, sometimes its too complicated	14
5	No, sometimes I do not want to post what I am or am not doing	10

Tests of Between-Subjects Effects

Dependent Variable: q8rateapp

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2.122 ^a	4	.530	1.380	.244
Intercept	1289.901	1	1289.901	3356.136	.000
q12intenuse	2.122	4	.530	1.380	.244
Error	50.349	131	.384		
Total	1950.000	136			
Corrected Total	52.471	135			

a. R Squared = .040 (Adjusted R Squared = .011)

Question

11

q11physacti * Typeofapp Crosstabulation

			Typeofapp						Total
			Weight Loss	Bodybuilding	Motivation	Yoga	Calorie Counters	Others	
q11physacti	Yes	Count	84	11	4	2	1	5	107
		Expected Count	78.7	14.9	3.1	1.6	3.9	4.7	107.0
	No	Count	16	8	0	0	4	1	29
		Expected Count	21.3	4.1	.9	.4	1.1	1.3	29.0
Total		Count	100	19	4	2	5	6	136
		Expected Count	100.0	19.0	4.0	2.0	5.0	6.0	136.0

Question 12

q12intenuse * q15attwapp Crosstabulation

			q15attwapp		Total
			Yes	No	
q12intenuse	Yes, Always	Count	13	3	16
		Expected Count	8.1	7.9	16.0
	No, sometimes I forget	Count	14	27	41
		Expected Count	20.8	20.2	41.0
	No, sometimes its too time consuming	Count	28	27	55
		Expected Count	27.9	27.1	55.0
	No, sometimes its too complicated	Count	7	7	14
		Expected Count	7.1	6.9	14.0
	No, sometimes I do not want to post what I am or am not doing	Count	7	3	10
		Expected Count	5.1	4.9	10.0
Total	Count	69	67	136	
	Expected Count	69.0	67.0	136.0	

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.963 ^a	4	.018
Likelihood Ratio	12.567	4	.014
Linear-by-Linear Association	.017	1	.897
N of Valid Cases	136		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 4.93.

Question 14

Group Statistics

q2gender		N	Mean	Std. Deviation	Std. Error Mean
q14price	Female	109	1.65	.946	.091
	Male	33	1.73	.801	.139

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
q14price	Equal variances assumed	1.649	.201	-.417	140	.677	-.076	.182	-.435	.284
	Equal variances not assumed			-.456	61.495	.650	-.076	.166	-.408	.257

Question 15

q15attwapp * Typeofapp Crosstabulation

			Typeofapp						Total
			Weight Loss	Bodybuilding	Motivation	Yoga	Calorie Counters	Others	
q15attwapp	Yes	Count	59	6	1	1	0	2	69
		Expected Count	50.7	9.6	2.0	1.0	2.5	3.0	69.0
	No	Count	41	13	3	1	5	4	67
		Expected Count	49.3	9.4	2.0	1.0	2.5	3.0	67.0
Total		Count	100	19	4	2	5	6	136
		Expected Count	100.0	19.0	4.0	2.0	5.0	6.0	136.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12.459 ^a	5	.029
Likelihood Ratio	14.527	5	.013
Linear-by-Linear Association	7.420	1	.006
N of Valid Cases	136		

a. 8 cells (66.7%) have expected count less than 5. The minimum expected count is .99.

q15attwapp * genwapp Crosstabulation

			genwapp		Total
			Female	Male	
q15attwapp	Yes	Count	55	14	69
		Expected Count	54.3	14.7	69.0
	No	Count	52	15	67
		Expected Count	52.7	14.3	67.0
Total		Count	107	29	136
		Expected Count	107.0	29.0	136.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.089 ^a	1	.765	.836	.464
Continuity Correction ^b	.008	1	.929		
Likelihood Ratio	.089	1	.765		
Fisher's Exact Test					
Linear-by-Linear Association	.089	1	.766		
N of Valid Cases	136				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 14.29.

b. Computed only for a 2x2 table

Question 16

q2gender * q16motiva Crosstabulation

			q16motiva					Total
			Financial Reward/punishment	Competition	Shared results on social media	Gamified Sport Apps	Other	
q2gender	Female	Count	47	39	1	21	1	109
		Expected Count	40.7	47.6	.8	18.4	1.5	109.0
	Male	Count	6	23	0	3	1	33
		Expected Count	12.3	14.4	.2	5.6	.5	33.0
Total		Count	53	62	1	24	2	142
		Expected Count	53.0	62.0	1.0	24.0	2.0	142.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.552 ^a	4	.009
Likelihood Ratio	13.904	4	.008
Linear-by-Linear Association	.213	1	.644
N of Valid Cases	142		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is .23.

q13social * q16motiva Crosstabulation

			q16motiva					Total
			Financial Reward/punishment	Competition	Shared results on social media	Gamified Sport Apps	Other	
q13social	Yes	Count	21	18	1	13	0	53
		Expected Count	20.7	21.8	.4	9.4	.8	53.0
	No	Count	32	38	0	11	2	83
		Expected Count	32.3	34.2	.6	14.6	1.2	83.0
Total		Count	53	56	1	24	2	136
		Expected Count	53.0	56.0	1.0	24.0	2.0	136.0

Question 18

q18humanpt * q2gender Crosstabulation

			q2gender		Total
			Female	Male	
q18humanpt	Yes	Count	8	7	15
		Expected Count	11.8	3.2	15.0
	No	Count	99	22	121
		Expected Count	95.2	25.8	121.0
Total		Count	107	29	136
		Expected Count	107.0	29.0	136.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.454 ^a	1	.011	.019	.019
Continuity Correction ^b	4.868	1	.027		
Likelihood Ratio	5.484	1	.019		
Fisher's Exact Test					
Linear-by-Linear Association	6.407	1	.011		
N of Valid Cases	136				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 3.20.

b. Computed only for a 2x2 table

Question 19

q2gender * q19futuredl Crosstabulation

			q19futuredl		Total
			Yes	No	
q2gender	Female	Count	84	25	109
		Expected Count	87.5	21.5	109.0
	Male	Count	30	3	33
		Expected Count	26.5	6.5	33.0
Total		Count	114	28	142
		Expected Count	114.0	28.0	142.0

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
q3appuse	Equal variances assumed	6.878	.010	1.238	140	.218	.053	.042	-.031	.137
	Equal variances not assumed			2.506	113.000	.014	.053	.021	.011	.094
q18humanpt	Equal variances assumed	9.742	.002	-1.414	134	.160	-.094	.066	-.225	.037
	Equal variances not assumed			-1.946	76.842	.055	-.094	.048	-.190	.002