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The Effect on Fitness Tracker User's Physical Activity Engagement and Motivation Levels, and Behaviour Adoption by Sharing Workout Results on Instagram

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Abstract

The gap between understanding the benefits of being physically active and engaging in it has historically existed. Hence, the introduction of Wearable Fitness Trackers and social media sites such as Instagram has created an opportunity to influence physical activity by encouraging people to track and share fitness data, build physically active communities and share their workout information with them. This research aims to understand if sharing workout results on Instagram is effective in driving engagement and motivation from the user's experience; and if it impacts the user's commitment to physical activity and behavioural adoption. The research design is based on quantitative methodology using an online survey strategy to collect data through sending a Google Forms questionnaire. This research was conducted as an explanatory study with a cross-sectional time horizon. After an open invitation via email and Instagram, the survey was done using a self- selection sampling technique. A link was shared to direct respondents to the survey. Quantitative data analysis is used in this research. Figures and tables represent and display numerical results to describe and understand the data. The total number of final respondents was 111. The sample size was 96 self-selected respondents.

Results show that the most experienced effect for users who share workout results on Instagram is "to encourage others to work out and promote behavioural intentions to exercise", while for those who are WFT users but non-sharers, "the desired effect" to start sharing workout results on Instagram would be "motivation"; and for those who were exposed to WFT results posts, the effect also impacted on their "motivation". Both WFT and Instagram users, together with social-sharers, value "motivation" as the most critical factor to sustain workout data-sharing in the long term. For those who are users but do not share data on Instagram, it is also the "motivation" factor that would drive their intentions to start sharing their workout data. This study provides critical insights for academics and researchers who conduct additional research on Instagram-based health promotion and intervention initiatives and the main perceived and desired effects of users social-sharing WFT on Instagram for maximising their research potential. Additionally, WFT designers might find insights for creating further ways to facilitate the easy sharing of fitness data on Instagram, understanding that social features and factors, together with individual motivation, are essential to help users engage with the device, physical activity, and other users.

Keywords: physical activity, Wearable Fitness Trackers, Instagram, individual, behaviour, adoption.

1. Introduction

Wearable Fitness Trackers

The increasing use of wearable fitness trackers (WFT) is becoming very popular among recreational fitness users (Harrison, 2015). The WFT generally tracks quantitative data of an individual's activities throughout the waking hours and during the night (Vooris et al., 2019). This

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wearable technology category includes wearable fitness devices, electronic activity trackers, activity monitors, fitness bands and smart wristbands (Gupta, 2021).

Smartphone and social media connectivity

The smartphone and its enhanced connectivity technology are pushing marketers to promote fitness trackers on social media platforms such as Instagram (Gupta, 2021). Furthermore, many fitness-tracker users are also Instagram users, who simultaneously show an exponential trend of sharing content on the Instagram platform, motivating other people to aspire towards a healthier lifestyle (Prichard, 2015).

The content shared on Instagram includes exercise routines, eating habits, workout outfits, and the workout results obtained from fitness tracking devices, which use sensors to track and measure calorie expenditure and heart rate, and provide a result reading when the workout ends. This information helps WTF users aim for higher fitness goals (Canhoto et al., 2016).

In general, when WFT is used in conjunction with social media applications, the information provided by the tracker is used to create recommended narrative posts and show numerical fitness variables such as calories burned and heart rate band profiles; together with visual representations such as maps or graphics that users might publish on social media (Harrison et al., 2015).

The use of WFT to measure activity levels gives a new viewpoint on how a gadget and its interactions with other technologies influence the adoption of physical activity. For example,

Instagram is based on sharing content with the user's followers and, in another way, receiving shared content from people the user also follows. In this line, the reinforcement of peers' and followers' support could give a chance to modify an individual's behaviour.

Importance of follower support

Peer and follower support can be perceived or real and defines the level of social acceptance and support to continue participating in physical activity, influencing one's quality of life (Epstein et al., 2007). When it comes to sharing workout results on social media, studies prove that a reinforcement prevenient from peers can provide a perception of social support and result in further engagement in a recreational activity (Vooris et al., 2019).

Peer reinforcement and the perception of social support are considered in this research. First, from the WFT user's perspective, the researchers want to know if sharing workout results on Instagram has the effect of encouraging others to workout, thus promoting behavioural intentions to exercise, and also, if there is an existing need to comply with other peers and fitness enthusiasts who follow the user on Instagram. Furthermore, the researchers want to understand if the user feels motivated by the support perceived from others, or, conversely, if the user perceives that they motivate other users by sharing their workout results. From the Instagram audience perspective, this research expects to learn how encouraging they perceive the content shared by WTF users is, and whether it motivates the audience to engage in physical activity, or if they feel supported and encouraged to begin exercising and adopt the behaviour.

Background and context

Covid-19 and technology acceptance

Since the COVID-19 pandemic arrived, the fitness industry has experienced the predominant role of technology being used to sustain the engagement of fitness. Technology facilitated workout live-streaming over lockdowns through information and communication technology (ICT) platforms such as Zoom and social media sites. In addition, the interaction of Internet of Things (IoT) devices with wearable fitness trackers and sites where users can socially share their fitness journeys have aided in the growing use of tracker devices. This creates the right moment to undertake this research now that users return to their everyday lives and adopt the technology.

Fitness and Instagram

After the introduction of Instagram in the digital world, the interaction between fitness and technology has been accompanied by the increasing use of social media to expose personal lifestyles, interact with other users, express their self-identity, and share content about health and fitness (Raggatt et al., 2018). This trend presents the promotion of health and fitness lifestyles as some of the most popular topics among recreational fitness enthusiasts.Social media trends

This research is taking place in the context of the popular social media health trend, "exercise inspiration", also known as "fitspiration" or "fitspo", in which individuals post or watch photos, inspirational quotes, and fitness advice (Raggatt et al., 2018). Fitspiration content is made and shared on major social media platforms such as Instagram and Facebook with friends, followers and the general public (Raggatt et al., 2018). This "fitspo" behaviour allows individuals to use social media to customise how they present themselves to their social networks (Zhao et al., 2008). Users

might exhibit the version of themselves they want to be rather than their true self, influencing the information they share regarding their health behaviours (Vaterlaus et al., 2015).

It is estimated that 89 per cent of young people, mostly those aged 18-29 (Vaterlaus et al., 2015), use social media daily, with 67 per cent accessing these sites by cell phone, which is necessary in order to have full access to Instagram. In this context, and according to previous research, young people are turning to social media for health and exercise information and health behaviour standards (Carrote et al., 2017), hence in recent years, the "fitspiration" trend has been introduced in the Instagram-sharing behaviour, with social media-based material meant to motivate people to exercise and live healthy lives (Carrote et al., 2017).

Young people integrate new media and technology as natural parts of daily life. According to media reports, young people spend 11 to 12 hours a day on technology and the media, developing a fondness for social media and technology that encourages social contact (Vaterlaus et al., 2015). Photo sharing is one of the most popular features of sites such as Instagram, with 79 per cent of 18-29-year-olds reporting sharing images online (Vaterlaus et al., 2015).

Considering fitness workout results obtained from fitness trackers as one of the increasing trends of social-shared content on Instagram by fitness enthusiasts and lifestyle influencers, the researcher acknowledges from previous research that most users usually post when a significant accomplishment is achieved (Vooris, 2019). Still, there is no substantial evidence of the effects and impacts experienced from sharing this content on Instagram.

The significance of the study

This research will explain how the increasing trend of sharing workout results on Instagram effectively drives engagement and motivation. Furthermore, it will help to understand if this activity helps users commit to physical activity long term and promotes behavioural adoption. The findings will aid the industry in determining if social-sharing workout results on Instagram are associated with long-term commitment, and will provide WFT marketers with insights about how user behaviour may be sustained and helped with the practice of sharing workout results.

Research aims

– To understand if sharing workout results on Instagram is adequate to drive engagement and motivation from the user's experience, and

– To understand if sharing workout results on Instagram impacts the user's commitment to physical activity and behavioural adoption.

Research questions

– How much does sharing workout results on Instagram effectively help wearable fitness tracker users remain engaged and motivated in physical activity?

– To what extent does sharing workout results on Instagram impact users' commitment to physical activity in the long term and drive behavioural adoption?

2. Literature Review

"Fitspiration" trend and Wearable Fitness Tracker market

"Fitspiration" is the name assigned to sharing Instagram posts to inspire audiences to adopt a healthier lifestyle. It responds to the conjunction of the words "fitness and inspiration" (Tiggemann et al., 2018) and describes the concept of encouraging healthy lives via fitness and food (Prichard et al., 2020; Tiggemann, Zaccardo, 2018).

The "fitspiration" trend promotes strength and empowerment through the diffusion of healthy eating, exercise and self-esteem. The "fitspiration" trend promotes strength and empowerment (Tiggemann et al., 2018). The most common site where this trend occurs is Instagram, an area exclusively dedicated to sharing photos and videos through permanent posts and temporary stories (Tiggemann et al., 2018). With a current user base of 700 million worldwide, it is the third most popular social media platform (Gupta, 2021). In addition, the fitness industry, which supports interactive and customized technologies such as ionized wear-garments, personalised pedometers, smartwatches, and wearable fitness trackers, among other things, is fuelling the "fitspiration" movement (Millington, 2017).

From the global fitness tracker market side, it is expected to grow at a 19.6 per cent annual rate from $17,907 million in 2016 to $62,128 million in 2023 (Gupta, 2021). It is well known that fitness trackers encourage users to engage in "self-monitoring" behaviours, tracking, storing and sharing information about their physical records, such as heart rate, step count, calories burned, training zones targeted, distance travelled, temperature, sleep hours, and so on (Deranek et al., 2020). In addition, these trackers are built to generate a sense of accountability, affection and peace

of mind in their users by encouraging strong engagement to their health and training schedules (Joines, 2020). Therefore, understanding the factors that cause the mass commercialisation of fitness trackers is desirable to promote the "fitspiration" Instagram trend among young customers. Statistics on social media audiences explain that Instagram is more prevalent among young people, with 71 per cent of users aged 34 or younger, compared to 22 per cent of Facebook users and 40 per cent of Twitter users (Statista, 2021). Therefore, these platforms are expected to gain traction as prospective delivery vehicles for health promotion and behaviour modification interventions (Maher et al., 2014).

WFT marketers are rushing to Instagram to capitalise on the "healthy living" trend by promoting fitness products and encouraging healthy eating and active lifestyle regimens (Gupta, 2021). Furthermore, companies utilise Instagram to promote the concept that obtaining an ideal physique is within consumers' reach by presenting attractive ads. According to previous findings, Instagram is a particularly viable channel for delivering compelling health information (Edney et al., 2018); health communications with inspirational visuals and an emphasis on an actual product have proved to be the most engaging (Edney et al., 2018). Marketers from WFT manufacturers use different creative aspects, which may represent variances in their target audiences and highlight the value of market segmentation in health-promoting advertising efforts (Edney et al., 2018); they are also especially interested in identifying Instagram users' likes, reactions and responses to WFT-related posts. Users' reactions to other users' posts may be understood as peer and follower support from the user perspective, which could serve as drivers for exercise intentions and interest, which are precursors to engage into physical activity and eventual participation in health promotion programmes and behavioural interventions (Edney et al., 2018). The potential for such involvement in workout tracking to result in beneficial behavioural intervention highlights the need for understanding and improving WFT user engagement to maximise potential benefits to users, audiences and WFT brands (Edney et al., 2018). Wearables include characteristics seen in health behaviour interventions such as self-monitoring capabilities, which have been shown to have a powerful effect on improving health behaviour (Edney et al., 2018). Also, WFTs are generally advertised as gadgets to assist users in improving their health, and some emerging data suggests wearables may be effective in improving physical activity engagement (Edney et al., 2018). Results from research conducted by Tiggerman and Zaccardo in 2018 regarding "fitspiration" posts show that the majority of images presented were of people (63.7 %); in second place, food (19.0 %); and "others" (17.3 %). Statistics, including the focus of this study, which is the sharing of fitness tracker workout results, represented 14.4 per cent of the "others" categories (Tiggerman et al., 2018). Even though social media-sharing WTF results continue to report lower than expected rates of participation, major brands such as Fitbit and Garmin have incorporated unique creative features into their social media postings (Edney et al., 2018) and interactive features to improve social-sharing, such as recommended posts, and the presentation of numerical fitness variables like calories burned and heart rate with ready-to-share data for social media posts. Visual representations such as maps of runs or graphics are also available for users who might use them to publish as status updates (Harrison et al., 2015).

Factors that influence the usage of Wearable Fitness Trackers

We understand that WFT motivate users to adopt self-monitoring behaviours including tracking, saving and social-sharing of their activity. Results and parameters such as heart rate, calories burned, distance covered and sleep quality, among others, are used for monitoring and social-sharing. But to understand, promote and sustain social-sharing behaviours such as "fitspiration", it is essential to identify the factors that explain the increasing adherence of young users and the general audience interested in maintaining their health and fitness by utilising WFT. By adopting a devotion to health and a workout regime, these factors can drive a sense of accountability, affinity and security (Gupta, 2021).

The technical and social conditions in which a technological product is distributed substantially affect its use. The technical requirements limit what technology can achieve, but the social environment defines it as acceptable in a given social context (Canhoto, Arp, 2016).

The level to which others impact consumer behaviour is referred to as "social factors", and it may be so strong that it even outweighs displeasure with the performance of the technology. This means that technological adoption may occur as a result of peer observation, in which the adoption of innovation is evident to others (Canhoto, Arp, 2016). However, individual factors also impact users' behaviour in general, and technology use in particular (Venkatesh et al., 2012). This involves both the users' attributes and their technological experience.

Existing research suggests that younger consumers are more likely to welcome technology in general (Canhoto, Arp, 2016). New generations are more task-focused than earlier generations and more inclined to accept technology that enhances task completion (Venkatesh et al., 2012). Younger users are also more sensitive to societal pressure (Canhoto, Arp, 2016). Regarding gender, men are often more likely to accept new technologies than women (Canhoto, Arp, 2016). However, the influence may differ due to product attributes, with males preferring functional qualities and women choosing behavioural ones (Venkatesh et al., 2012). In line with these findings, evidence highlighted earlier in this work shows a rising trend to show themselves as active, healthy people on social media platforms, particularly among young consumers.

Social factors are vital determinants for sharing workout results with others. To prove it, participants of a research study (Canhoto, Arp, 2016) planned to meet with others to work out together using a specific fitness app. The participants also enjoyed discussing their accomplishments and found that they could inspire one another when they discovered that mobile apps built up a community. That shows that it might be simpler long term if users had the right community with whom they could share their workout information.

Regarding sharing WFT results, the present research focuses on Instagram because it represents a social media platform that offers the opportunity to build a community of followers and peers. The literature explains that, in the social context, users who see what workouts others have done might feel inspired to do their workouts as well (Canhoto, Arp, 2016).

Existing research indicates that building user communities and sharing exercises and accomplishments appear to be important for sustained use of WFT technology, and also that social expectations and influence in the form of peer support are essential factors in technology adoption but not necessary in long-term usage (Canhoto, Arp, 2016). Despite this, the potential of using a larger community like Instagram to help users develop a higher commitment to physical activity, adopt the behaviour, and sustain WFT use in the long term by sharing workout results remains unknown.

Social-sharing workout results

There are existing studies (Zhu et al., 2017; Kent, 2020) that contribute to the understanding of social factors that enhance social-sharing workout results on social media and serve as a guide to inquire further into the present study.

Rachael Kent, in her study, found that users share content from tracking devices on Instagram to represent an identity for their audiences. This means, through Instagram, users can construct their identities and attach a sense of belonging to a specific community. The sharing of fitness content on Instagram motivates users to commit to personal goals by being accountable to their community (Kent, 2020).

The development of effective wearable technology has encouraged self-tracking, active lifestyles in young consumers (Gupta, 2021). Fitness-tracking users represent themselves through their physical awareness when sharing fitness results on Instagram; the resulting archive visualises the process of becoming an identity (Kent, 2020). Fitness trackers are defined in three ways: as a data collection tool, a means of setting new and higher goals, and a social actor who persuades people by rewarding with positive feedback, configuring a behaviour or attitude, and providing a social support network (Zhu et al., 2017).

Kent's findings imply that two communicative elements of wearable devices, social-sharing and social competition, provide a broader viewpoint as information and communication technology modify health communication practices (Kent, 2020). Social-sharing is the behavior of publishing workout data and exercise outcomes via online platforms, whereas social competition is the act of engaging in social media competitions utilising tracking data (Zhu et al., 2017). Aside from social-sharing, the competing social function of WFT plays into people's competitive spirit by bringing peers into the picture, which may keep individuals committed to their training goals and have a positive effect on physical activity (Kreitzberg et al., 2016).

Combining Instagram with self-tracking devices can provide participants with a dual function: users can track, measure, and record their workouts while sharing and comparing themselves with others, stimulating and educating their health behaviours (Kent, 2020). These monitored practices serve as competitive visual motivation to stimulate additional changes in health habits measured against others in the community (Kent, 2020). Sharing high moments or successes isn't necessarily motivated by a desire to obtain positive comments from the Instagram community. While this is welcomed, receiving recognition from others at the same fitness level or with the same objectives can be understood as peer reinforcement (Kent, 2020).

Competitive motivation is considered in this research with a slight change of perspective. Competitiveness may represent users who have achieved fitness goals that seem more advanced, better, ideal when compared to others, and which are deemed credible enough to social-share to exemplify a perfect fitness standard (Kent, 2020). We know from previous findings that social presence drives people to increase and activate their exercise routines. This shift might arise from comparing themselves to others (Strauss, 2002); hence this research aims to fill in the gaps and determine if the social exposure on Instagram might create a sense of self-pressure to be a guide to motivate followers or comply with the user's follower community, which is still unclear.

According to the Theory of Planned Behaviour (TPB), which was used in existing research (Zhu et al., 2017), the primary predictor of behaviour is one's intention to engage in that behaviour. For example, in line with this research topic, the TPB explains that in predicting behavioural factors, users who social-share workout results expect a direct engagement in social competition, which indirectly influences people's inclination to exercise. In other words, social-sharing and social competition may increase the likelihood of being exposed to exercise and recall attitudinal information indicating a degree of favourability or unfavourability towards exercise (Zhu et al., 2017). Information gathered during social-sharing and social competition may reflect feelings and drivers created by exercise (Zhu et al., 2017). Secondly, as communicative features of WFT, social-sharing and competition can help build, develop or maintain ideas that engage most people in exercise. This may stimulate exercise through social influence and peer pressure, and fulfil people's need for a personal connection with others. Finally, social-sharing and social competition might remind people of their exercise potential and their autonomy in choosing individual exercise behaviours (Zhu et al., 2017).

When investigating TPB in the context of WFT, researchers considered the two communicative features of these gadgets. So many of our daily actions are shared and communicated with others via social media. Social-sharing and social competition may also predict exercise habits and might even impact individuals who do not utilise active fitness devices (Zhu et al., 2017). This research will also collect answers from Instagram users who do not have wearable fitness trackers and may never publish or comment about their or others' workouts on social media. Still, such posts from WFT users may impact their exercise intentions.

Workout tracking and social-sharing to motivate exercise

Compared to personal-use apps, some WFTs that aid users in sharing physical activity – related data have been proven to increase activity levels, the accomplishment of daily goals, and engagement rates. Sharing physical activity results on social media, such as step count, has been shown in past research to drive people to be more physically active through social support and social reinforcement (Consolvo et al., 2009). Additionally, posts that showed a higher engagement within a social community of followers were associated with self-improvement, meaning that social-sharing of personal and significant results has been proven to have a positive effect on motivation to engage in a healthy lifestyle in younger audiences on social media (Edney et al., 2008).

Although there is an existing common belief that posts might be more interesting to the audience by incorporating images from walks, jogging routes, or describing larger achievements, simple information obtained from WFT like calories expended, repetitions or pace would make the posts more attractive to share (Munson, Consolvo, 2012). Therefore, the present study focuses on users sharing such information in Instagram posts, aiming to identify whether this behaviour is adequate to support and improve motivation to remain engaged in physical exercise.

Research on social-sharing workout results on the Facebook platform shows that the social media app could reach people whose opinions matter but may not be involved in the health activity themselves. It might offer an extra channel for obtaining social support and reinforcement beyond what is accessible by sharing simply with other peers (Newman et al., 2021).

Some motivations for social-sharing WFT results are becoming exciting and gaining social support (Munson, Consolvo, 2012). Research in the field (Munson, Consolvo, 2012), which studied social-sharing workout results on the Facebook platform, found that some users experience reluctance to share and fear over-sharing content. In addition, some users worry that they do not always receive the support that they expect. Due to these concerns, it might be better to social-share with the user's existing online social network or peers instead of the broad general public. Also, sharing common interests includes a desire for reciprocity or sharing the experience with others and an understanding that the people they are sharing with are in a similar situation, helping users remain accountable. Numerous participants from the study believed that communicating with a partner who was a stranger but whose activity level, fitness and objectives were comparable was

more beneficial than sharing with friends in a completely different position. For these reasons, it is interesting to consider Instagram as a platform to post WFT workout results due to its social conception, which claims that people who follow a user generally share similar interests. Hence, it is naturally easier to find peer reinforcement and support without necessarily becoming friends or knowing each other. This study will determine whether sharing on Instagram is effective for feeling supported, supporting others, and staying accountable in users' fitness journeys.

3. Research Methodology

This study adopted a positivist philosophy with an inductive approach. Data was collected and analysed to explore the Instagram-sharing trend and build a theory regarding its effect on physical activity engagement, motivation, commitment and behaviour adoption. For this research, a sample population of 96 respondents was required to answer an online survey, which was analysed using quantitative methods.

The research design is based on quantitative methodology using an online survey strategy to collect data through sending a Google Forms questionnaire. This research was conducted as an explanatory study with a cross-sectional time horizon, as data collection occurred at a single point in time (Saunders et al., 2019). Longitudinal studies can study change and development over sustained periods and provide a measure of control over some of the studied variables (Saunders et al., 2019).

Sources of data collection

This study utilised primary data with an online survey as an instrument. After an open invitation via email and Instagram, the survey was done using a self-selection sampling technique. A link was shared to direct respondents to the survey presented on a Google Forms questionnaire platform.

The questionnaire was pre-tested by distributing a link to participants in touch with the original author. The pre-testing data was not included in the final analysis. The data collection was carried out between December 14, 2021, and January 13, 2022. Two weeks following the survey's launch, a reminder message was delivered. The total number of final respondents was 111.

Research instrument and measures

The research instrument is a 20-question survey presented in Google Forms. The questionnaire was divided into five sections: (1) participant consent; (2) demographics and research target; (3) WFT user and workout result sharer; (4) WFT & Instagram user but non-sharer; and (5) Instagram only user/audience.

Section one

This section states that the participant may withdraw responses from the study at any time before completion or decline to answer specific questions at any time. Next, it states the confidentiality and anonymity of the respondents' information.

Section two

Demographics and research target population-specific questions. The survey asked if the participant is an Instagram user (Yes/No), how often the participant performs physical activity (once, twice, or more than three times per week), their age group (in the group of years: 18–24; 25–39; and above 40-years-old), gender, if the participant owns a WFT device (Yes/No), and if they use the information obtained from it to social-share workout results (Yes/No).

Section three

The survey asked specific questions to WFT and Instagram users, such as the reasons "why" the user shares WFT results on Instagram, using a single-answer, multiple-choice question that offered statements which included: engagement in the fitness journey; keeping high levels of motivation; contributing to a commitment with physical activity in the long-term; encouragement to others and promotion of behavioural intentions to exercise; and, finally, the need for compliance with the audience, representing the perceived support/reinforcement obtained from followers. Following questions required the participant to agree or disagree with statements about engagement and accountability, level of commitment, and contribution to adopting a physical activity behaviour. This has been measured using a Likert scale (1 to 5) where 1 was "strongly disagree"; 2 "disagree"; 4 "agree"; and 5 "strongly agree"; with 3 being neutral. Participants were also asked to choose different "factors" that contribute to the long-term sustainability of social-sharing workout results with a multiple-choice answer of seven options including workout engagement; motivation; long-term commitment; promoting the adoption of exercise; and complying with a knowledgeable audience.

Section four

This section inquired further and included WFT and Instagram users who do not share workout results on Instagram, at least when completing the survey. By obtaining responses from these participants, the researcher wanted to know if these users would ever share WFT results in the future (Yes/No/Maybe) and, if that happened, which "factors" they would consider sustaining that practice. It was measured by answering a multiple choice of seven options including workout engagement, motivation, long-term commitment, promoting exercise adoption, complying with followers, and being accountable. They were also asked "why" they would do it, using a single-answer, multiple-choice question that offered statements which included: engagement in the fitness journey; keeping high levels of motivation; contributing to the commitment with physical activity in the long term; encouragement to others and promotion of behavioural intentions to exercise; and, finally, the need for compliance with the audience, including perceived support from followers.

Section five

The last section of the research instrument asked about the audience. This relates to the Instagram users who may see the workout results of those WFT users who have posted on Instagram, answering whether they have witnessed WFT-related posts or not (Yes/No), which means they might experience effects that the study aims to understand from a passive audience point of view. They answered a multiple-choice question that offered statements which included: engagement in the fitness journey; keeping high levels of motivation; contributing to the commitment with physical activity; encouragement and self-adaption of behavioural intentions to exercise.

Sampling types

For this study, the self-selection, non-probability sampling technique was used due to the difficulty of targeting a sample of specifically Instagram and fitness tracker users from the total Instagram user population. It was important for the study's requirements to target participants who often share their content on Instagram, are fitness tracker users, or have had sufficient interaction with WFT tracking posts on Instagram to respond to the research questions.

Sample size

For non-probability sampling techniques, the sample selected is used, for example, to illustrate a particular aspect or to generalise to a theory instead of a population (Saunders et al., 2019). Respondents that self-select often present strong feelings or opinions about the topic (Saunders et al., 2019), and in this case, this is exactly what was required due to the specificity of the topic and research time-frame constraints to answer the research questions and meet the objectives. The sample size of 96 minimum respondents was obtained as follows.

Sample size calculation

Target population: Fitness wearable users aged 18 to 39 perform physical activity at least twice a week. Total population of Fitness Tracker users in New Zealand: 393,000 (Nielsen, 2017; Statista, 2020). Users between 18 and 39 years old: 196,500. Represent 50 per cent of total users (Nielsen, 2017; Statista, 2020). Users that perform physical activity at least twice a week: 49,125. Represent 25 per cent of the target population (Nielsen, 2017; Statista, 2020). The sample size needed for a population of 49,125 with a confidence level of 95 per cent and a margin of error of 9.99 per cent is 96.

Sample size was calculated on the following formula:

$n = N*X / (X + N - 1)$

Where $X = Z\alpha/2^2$ -*p*(1-p) / MOE^2, and $Z\alpha/2$ is the critical value of the normal distribution at $\alpha/2$ (e.g. for a confidence level of 95 per cent, α is 0.05 and the critical value is 1.96), MOE is the margin of error, p is the sample proportion, and N is the population size (Daniel et al., 2018).

4. Results and Discussion

Demographic characteristics and research-specific audience

Table 1 shows the sample's sociodemographic characteristics. More than half (59.5 per cent; n = 66) of the 111 respondents were women, and the majority (77.5 %; n = 86) were between 18 and 39. The participants were physically active and Instagram users (100 %, n = 111). This represents a young and active sample. The majority (96.4 %; n = 107) engaged in physical activity more than three times per week and use WFT (95.5 %; n = 106). A small percentage of respondents (33 %; n = 35) said they share their WFT results with their Instagram followers. Participants who were self-selected in this study showed some similarities with participants and findings from other studies in the field. Regarding age, a clear majority of the participants are in the research-target population of

18 to 39 years of age, which is in accord with existing research (Canhoto, Arp, 2016; Venkatesh, 2012). This suggests that younger consumers are more likely to welcome technology in general. Also, responses to this research are primarily in line with recent statistics that show that Instagram is more prevalent among young people, with 71 per cent of users aged 34 or younger (Statista, 2021). In regard to gender, previous research discovered that males prefer functional technology features, and women prefer behavioural ones (Venkatesh et al., 2012). This may suggest why physically active women WFT and Instagram users were more willing to self- select themselves to participate in this study at a higher percentage than men. This study's low rate of WFT social-sharers (33 per cent) was expected. Previous research conducted by Tiggerman and Zaccardo in 2018 regarding the whole "fitspiration" posts universe on Instagram showed that WFT result-sharers represented only 14.4 per cent of the "others" category (17.3 per cent of the entire posts universe).

Table 1. Demographic characteristics and research-specific audience

Variables Gender	*n*	**%**
Female	66	59,5
Male	45	40,5
Instagram User		
Yes No	111	100
	0	0
WFT user		
Yes	10695,5	
No	54,5	
Age group		
18–24 years	1311,7	
25–39 years	7365,8	
above 40 years	2522,5	
Physical activity		
Yes	111100	
No	00	
Once a Week	10,9	
Twice a week	32,7	
More than three times a week	10796,4	
Social-Sharer		
Yes	3533	
No	7167	

WFT Results in social-sharer

Perceived effects

Figure 1 shows the overall responses to the effects perceived by participants and the reasons

"why" they post their WFT results on Instagram. Participants responded using a single- answer, multiple-choice questionnaire. Out of the 111 respondents, only 35 were social-sharers of their WFT results on Instagram. Most respondents (34.3%, n = 12) stated that they post WFT results on Instagram because it "encourages others to work out and promotes behavioural intentions to exercise". Regarding motivation, an apparent equal number of respondents chose the following options: "it helps me to remain engaged in my fitness journey" (22.9 %; n = 8); and "it helps me to stay motivated and motivate others" (20 %; n = 7). For long-term commitment, a smaller percentage of participants marked "I feel that it contributes to my commitment to physical activity in the long term" (14.3 %; n = 5). Lastly, representing the follower reinforcement perspective, a minority of the participants responded, "I feel the need to comply with fitness enthusiasts who follow me on Instagram" (2.9 %; n = 1).

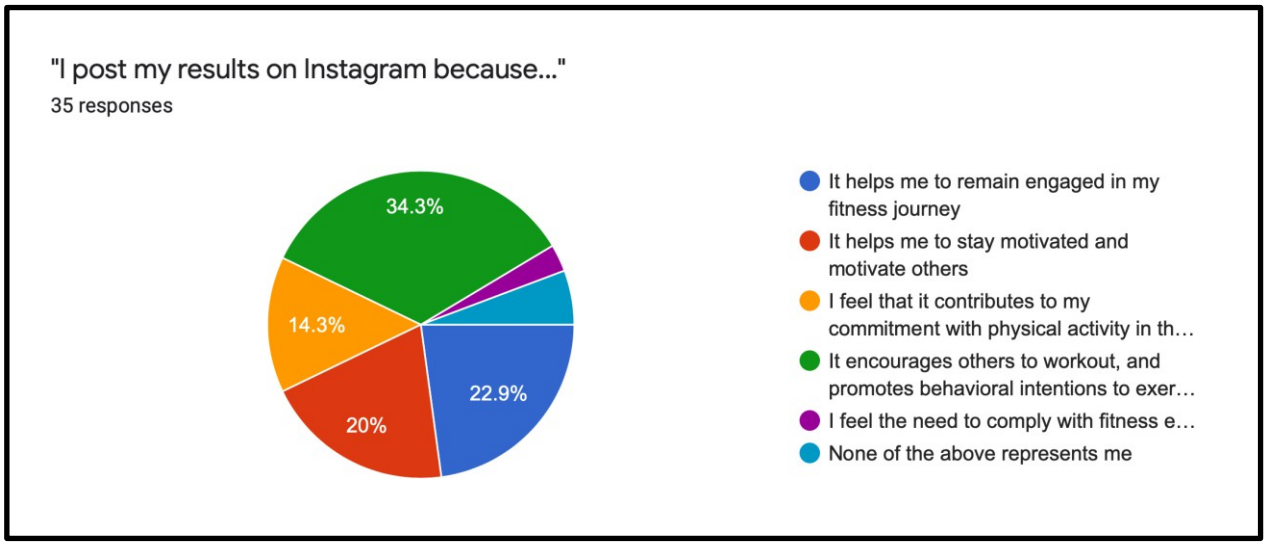

Fig. 1. The "Why". Effects perceived by WFT users and social-sharers when posting their results on Instagram

The exposed findings from the present study regarding users who share workout results on Instagram show that the main perceived effect obtained from sharing WFT results on Instagram is the promotion of behavioural intentions to exercise in relation to the workout encouragement to others. In line with other research in the field, the role of follower support serves as a driver for creating awareness and interest, which are precursors to intentions and eventual participation in physical activity and behaviour adoption (Edney et al., 2018). These findings suggest that wearables can be used as a health behaviour promoter. Furthermore, considering that the respondents in this research are mainly young, it has been found that this population is more sensitive to societal pressure and awareness (Canhoto, Arp, 2016).

In line with findings from this research regarding motivation and engagement, there is evidence that, in the social context, users who see what workouts others have done feel inspired to do their workouts as well (Canhoto, Arp, 2016). This may explain why self-motivation, motivation for others, and self-engagement in their fitness journey were the second most important effects for the respondents of this study.

In contrast with existing research (Kent, 2020; Canhoto, Arp, 2016), respondents from the present study did not think that they felt pressured to comply with their audience. On the other hand, previous research conducted by Kent found that WFT sharer commitment and motivation are enhanced when the users remain in compliance with and accountable to their audiences (Kent, 2020). Also, previous research shows that complying with social expectations and social influence in the form of peer pressure is essential in technology adoption (Canhoto, Arp, 2016) but not necessary in long-term usage, which may explain why only the minority of respondents think that sharing WFT results contributes to their long-term commitment to physical activity.

Effect on engagement

Figure 2 shows the specific level of agreement between posting WFT results and the following effect on self-engagement and a perceived sense of accountability. This has been measured using a Likert scale (1 to 5) where 1 was "strongly disagree"; 2 "disagree"; 4 "agree"; and 5 "strongly agree";

with 3 being neutral. More than half (54.3 %; n = 19) of the 35 social- sharers who participated in this study agreed that sharing WFT results on Instagram is an excellent way to engage in physical activity. Adding those who strongly agreed on the mentioned effect (22.9 % n = 8), we found that participants have a major agreement on the impact of sharing WFT results over engagement into physical activity (77.2 %; n = 27); in contrast, a smaller proportion of respondents found themselves in disagreement or in strong disagreement with this effect (11.4 %; n= 4).

Fig. 2. Level of agreement between posting WFT results and its effect on self-engagement and accountability

Respondents from the present study agreed on the perceived positive effect on engagement in physical activity that sharing WFT workout results on Instagram provides. When posting workout results on social media, 77.2 per cent of social-sharers feel engaged and accountable for their physical activity. In previous studies, we understand that WFTs have characteristics that have been shown to have a powerful effect on improving health behaviour. Also, some emerging data suggests wearables may effectively improve physical activity engagement (Edney et al., 2018). Adding Instagram-sharing as a variable for this study, we found that, on top of the technological characteristics of WFTs, the effect of sharing the results on Instagram is strongly perceived as a good way to engage users in physical activity and raise a sense of accountability. Related studies on Facebook-sharing, where WFT technology is used to aid users in sharing physical activity-related data, have shown increases in activity levels, the accomplishment of daily goals, and engagement rates (Consolvo et al., 2009).

Effect on motivation

Figure 3 shows the specific level of agreement between posting WFT results and the following effect on supported motivation and motivation for others. This has been measured using a Likert scale (1 to 5) where 1 was “strongly disagree”; 2 “disagree”; 4 “agree”; and 5 “strongly agree”; with 3 being neutral. Thirty-four per cent (n = 12) of the 35 social-sharers who responded agreed that sharing WFT results on Instagram makes them feel supported by others, which keeps them motivated and able to motivate others. Adding those who strongly agreed on the mentioned effect (34.3 %, n = 12), we found that participants significantly agreed on the impact of sharing WFT results over motivation (68.6 %, n = 27). On the other hand, a smaller proportion of respondents found themselves in disagreement or strong disagreement with this effect (14.3 %; n = 5).

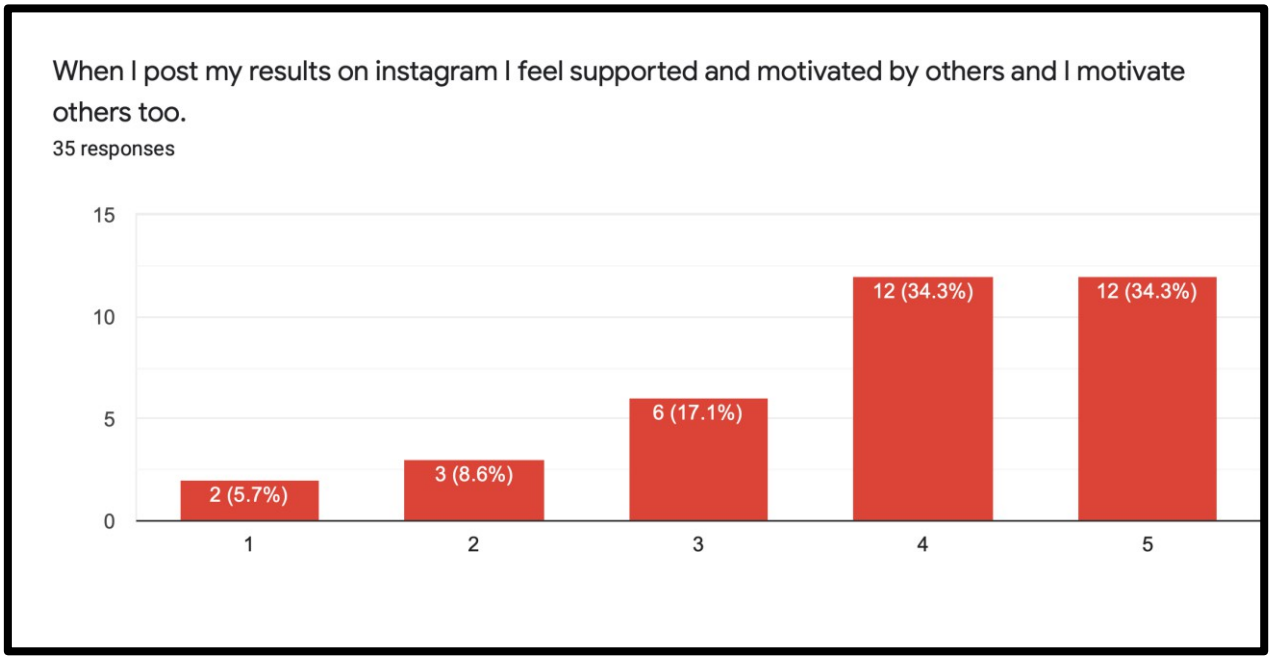

Fig. 3. Level of agreement between posting WFT results and the following effect on supported motivation and motivation for others

The perceived effect on self-motivation and motivation for others receives 68.6 % agreement among social-sharer respondents. This effect may be driven by the posts with higher engagement within the user's community which, according to previous research, are those associated with self-improvement, meaning that social-sharing of personal and significant results has been found to have a positive effect on motivation and the pursuit of healthy goals in younger audiences on social media (Edney et al., 2008). Additionally, when it comes to contributing to others' motivation, existing research supports the findings obtained in the present research, given that sharing common interests within a social community may involve a desire for reciprocity or to share the experience with others. It also implies an understanding that the people with whom they are sharing workout results might be interested in similar workouts and might find motivation by seeing other users' posts, in both ways helping users to remain accountable (Munson, Consolvo, 2012).

Effect on commitment

Figure 4 shows the specific level of agreement between posting WFT results and the following effect on long-term commitment. This has been measured using a Likert scale (1 to 5) where 1 was "strongly disagree"; 2 "disagree"; 4 "agree"; and 5 "strongly agree"; with 3 being neutral. Of the 35 social-sharers who responded, 34.1 per cent (n = 11) agreed that sharing WFT results on Instagram enhances the level of long-term commitment to physical activity. Adding those who strongly agreed on the mentioned effect (22.9 % n=8), we found that participants substantially agree on the impact of sharing WFT results over motivation (54.3 %; n=19). On the other side, a small proportion of respondents found themselves in disagreement or strong disagreement with this effect (25.7 %; n = 9).

Existing research shows mixed findings regarding the effect of commitment when it comes to social-share WFT results. In the present study, the level of commitment to physical activity in the long term was reported to have 57 per cent agreement, while almost half of the participants, representing 45.7 per cent, perceived this effect as neutral or found themselves in disagreement. In accord with those who agreed on the effect of commitment by social-sharing WFT results, previous research found that the combination of Instagram with self-tracking technology provides users with the ability to self-track, measure and record their workouts, and also share and compare themselves with others, stimulating and educating their health behaviours (Kent, 2020). While this has a potential positive effect on long-term commitment, more than half of the participants agreed with this.

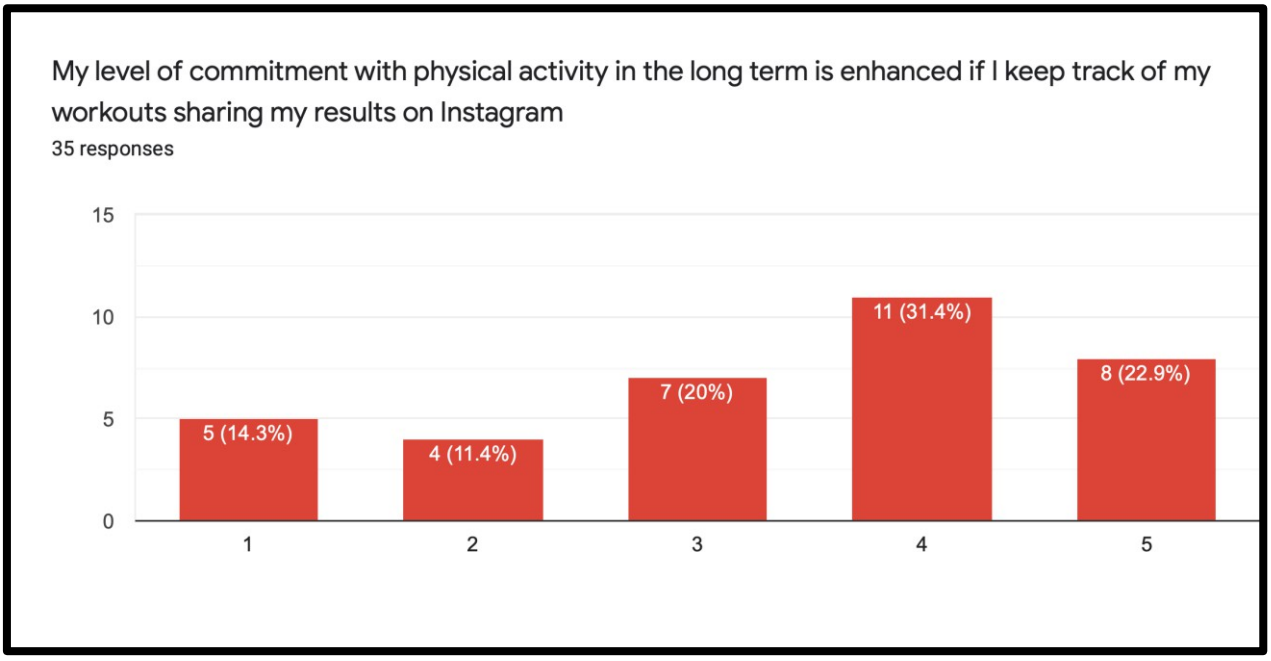

Fig. 4. Level of agreement between posting WFT results and the following effect on long term commitment

In contrast with those who agreed, this effect may be viewed from the technology adoption perspective, which is indirectly related to users' physical activity commitment. Existing research highlights that building user communities and sharing exercises constructs social expectations and social influence, which are initially important factors in the technology adoption but not necessary in long-term usage or commitment (Canhoto, Arp, 2016). This may explain why almost half of the respondents to the present study disagreed with adopting a long-term commitment effect by sharing workout results on Instagram.

Effect on adopting a behavioural adoption

Figure 5 shows the specific level of agreement between posting WFT results and contributing to others adopting a behavioural change towards exercising. This has been measured using a Likert scale (1 to 5) where 1 was “strongly disagree”; 2 “disagree”; 4 “agree”; and 5 “strongly agree”; with 3 being neutral. 37.1 per cent (n = 13) of the 35 social-sharers who responded agreed that sharing WFT results on Instagram positively contributes to others adopting a behavioural exercise change. Adding those who strongly agreed on the mentioned effect (45.7 %, n = 16), we found that participants have a significant agreement on the impact of sharing WFT results over motivation (82.8 %, n = 29). On the other hand, a small proportion of respondents found themselves in disagreement or strong disagreement with this effect (2.9 %, n = 1).

“Adopting a behavioural change towards exercising” is the effect with the highest level of agreement and the lowest level of disagreement among participants. This result coincides with the overall responses for this study. Most of the participants stated that they share WFT results on Instagram because they think they encourage others to work out and promote behavioural intentions to exercise. These findings are in line with other studies in the field that analysed fitness tracker usage, stating that the information raised from WFTs, when shared, persuades people by rewarding them with positive feedback, configuring a new behaviour or attitude by providing a social support network (Zhu et al., 2017). Social-sharing and competition indirectly influence the inclination to exercise, helping to build, develop or maintain ideas that engage most people in exercise. Daily actions such as sharing and communicating with others via social media confirm that this can predict a role in exercise habits and might even impact individuals who do not utilise active fitness devices but may feel inspired by social posts (Zhu et al., 2017). The present study confirms that the majority of users agree with this theory, configuring the effect of contributing to others' exercise journeys and promoting the behavioural adoption of physical activity as the primary intention for sharing workout results on Instagram.

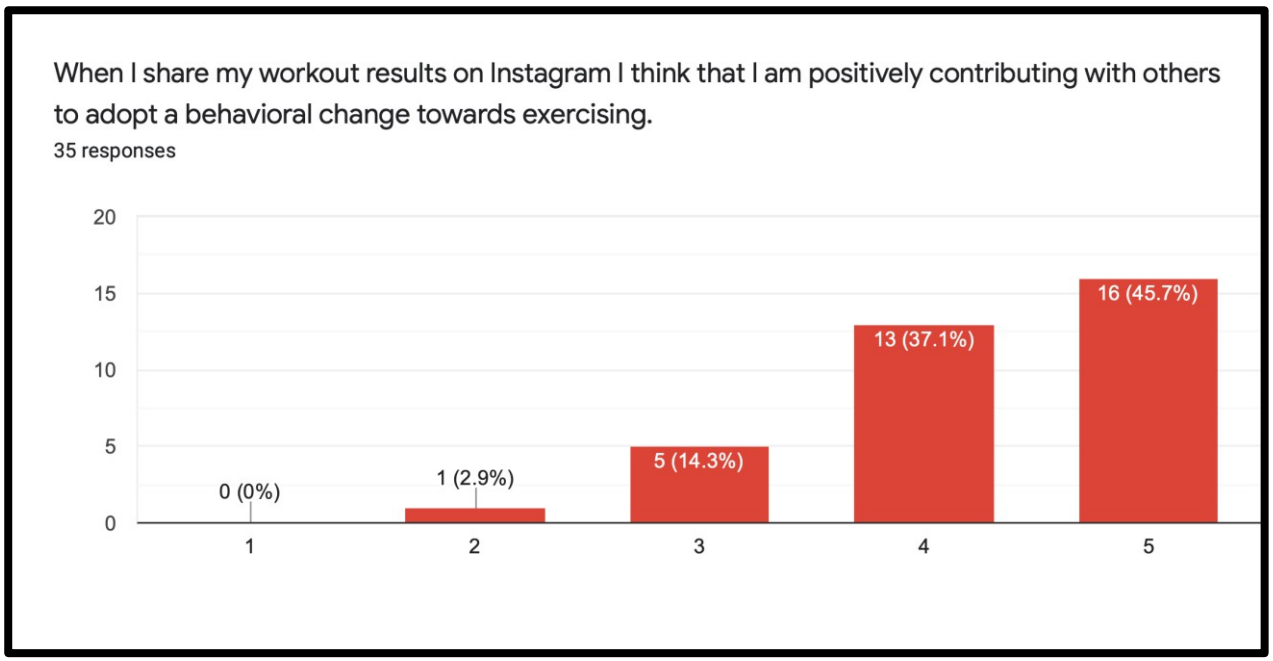

Fig. 5. Level of agreement between posting WFT results and contributing to others adopting a behavioural change towards exercising

Factors to keep sharing WFT results on Instagram

Figure 6 represents the factors that help social-sharers sustain the behaviour of sharing on Instagram in the long term. Participants responded with a multiple-choice of seven options. The majority of respondents (74.3 %; n = 26) marked "Motivation" as the most important factor, followed by "Workout Engagement" (62.9 %; n = 22); "Promoting the adoption of exercise" (60 %; n = 21); "Long-term commitment" (37.1 %; n = 13); "Accountability" (31.4 %; n = 11); and least important, "Comply with my followers" (5.7 %, n = 2).

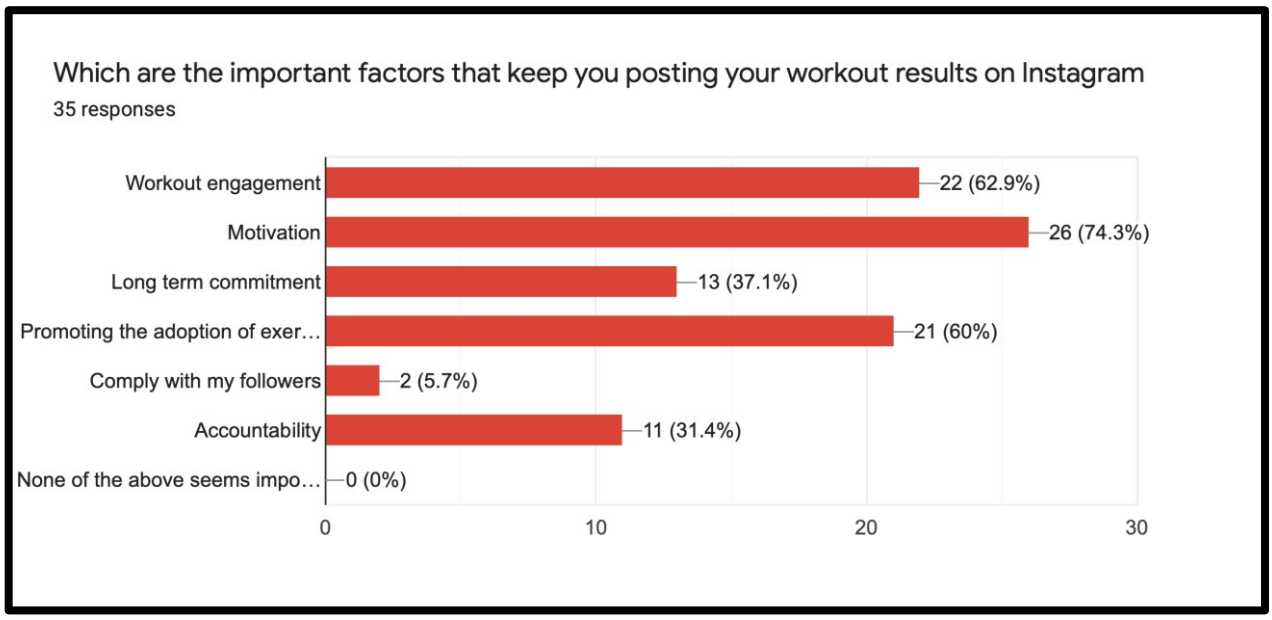

Fig. 6. Factors that help social-sharers sustain the behaviour of sharing on Instagram in the long term

The three most important factors that more than half of the participants valued for keeping posting WFT workout results on Instagram were, (1) motivation, (2) workout engagement and, (3) promoting the adoption of exercise behaviour. This is in line with the most agreed effects in this study (behavioural adoption; motivation; and engagement) but presents "motivation" as the most valued factor for individual social-sharing sustainability. This may be related to the effect on self-

motivation and motivation for others. Others impact the sustained sharing behaviour, defined as "social factors" by previous studies (Canhoto, Arp, 2016). The willingness to motivate others by social-sharing WFT results on Instagram may be influenced by social factors, meaning that technology adoption and use sustainability can be perceived as a result of peer observation or role models (Canhoto, Arp, 2016). Individual factors such as self-motivation also impact users' behaviour in general and towards WFT technology adoption (Venkatesh et al., 2012). Also, findings into the limits of the present study corroborate that there is not a substantial, existing sense of self-pressure to be a guide to motivate followers and comply with the user's follower community.

Non-social-sharer WFT and Instagram user

Willing to share workout results

Figure 7 shows the responses from 73 respondents who are WFT and Instagram users who do not share their workout results on Instagram but did respond regarding the possibility of starting to share their workout results in the future. Those who responded "Yes" (31.5 %; n = 23) and "Maybe" (52.1 %; n = 38) represented 83.6 per cent of those who already own a WFT and use the Instagram platform but currently do not share their results. Those who would still decide not to share in the future represented a smaller proportion of participants (16.4 %; n = 12).

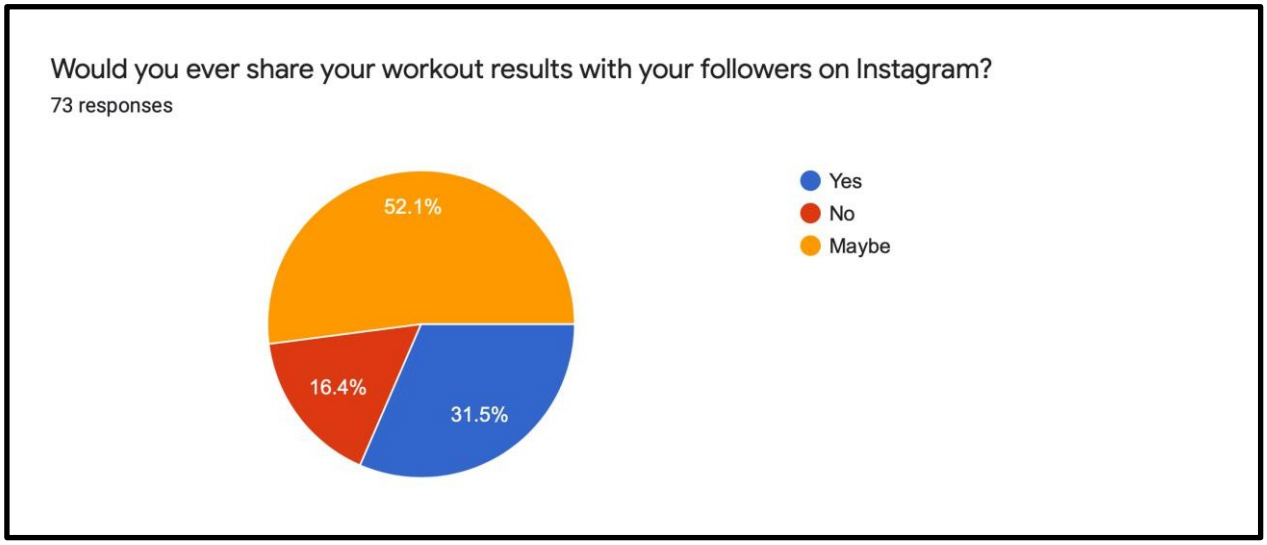

Fig. 7. Willingness to social-share workout results. WFT and Instagram users are non-sharers.

Despite the expected low number of participants who currently share workout results on Instagram (n = 35), this research shows that a higher proportion of respondents have the willingness to share, or maybe share, their workout results with their Instagram community in the future. This is an important finding that is in accord with the increasing participation of WFT users on Instagram, who feel inspired and motivated to share their healthy lifestyle with their online communities.

The willingness to share according to age groups is also an indicator that this research contributes to existing findings and statistics in the field, with further reassurance about user targets and behaviours.

Table 2 shows that those in the 18 to 24-year age range are more willing to share workout results in the future (87.5 %; n = 8), compared to the 25 to 39 age group (26.7 %; n = 47), and the 40 and above age group (16.6 %; n = 18). Supporting these findings, statistics on social media audiences show that Instagram is widely used among young generation, with 71 per cent of users aged 34 or younger (Statista, 2021). For the purposes of this research, we will next understand the effects and factors that potential sharers consider when starting to share workout results on Instagram in the future.

Non-sharers' potential desired effects

Figure 8 shows the desired effects that non-sharing users would potentially have if they decided to share their workout results in the future. Participants responded using a single-answer, multiple-choice question. The most important effects for participants (36.1 %; n = 22) were self-motivation and motivation to others, followed by encouragement and behavioural promotion to exercise (24.6 %; n = 15), engagement in their own fitness journey (8.2 %; n = 5), compliance with the Instagram audience (6.6 %; n = 4), and long-term commitment (3.3 %; n = 2).

Table 2. WFT users. Non-sharers per age group.

Age group	n	%
18 to 24 years n=8		
Yes	**7**	**87,5**
No	**0**	**0**
Maybe	**1**	**12,5**
25 to 39 years n=47		
Yes	**13**	**27,6**
No	**8**	**17**
Maybe	**26**	**55,4**
40 + years n=18		
Yes	**3**	**16,6**
No	**4**	**22,2**
Maybe	**11**	**61,2**

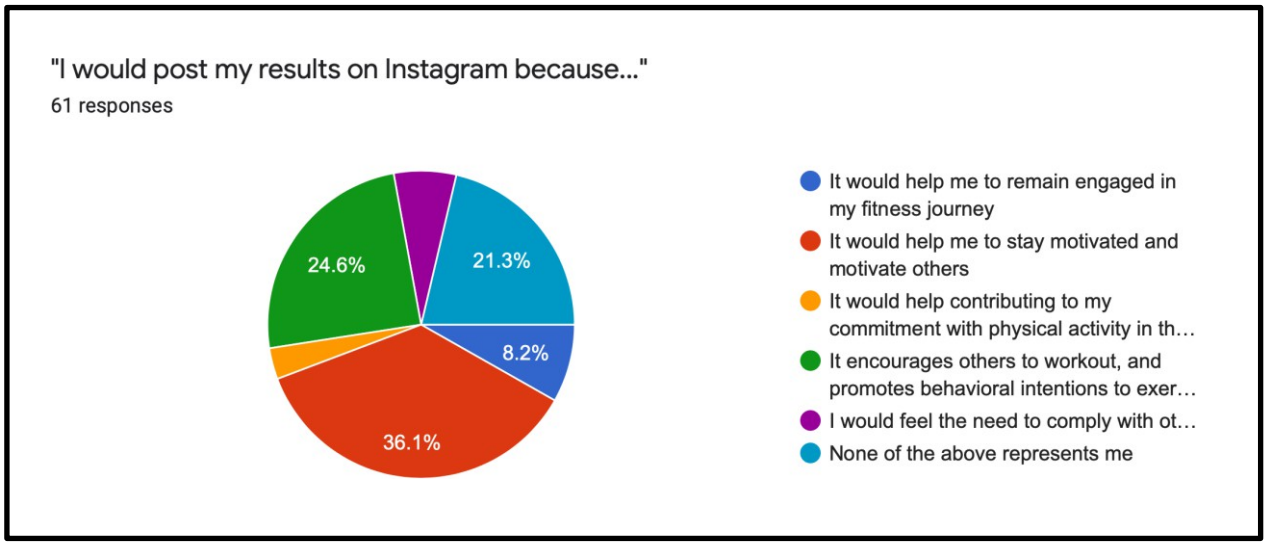

Fig. 8. Desired effects that non-sharing users potentially have

In contrast with the primary effect found among those who already share workout results on Instagram, the most desired effect for those considering sharing workout results on Instagram in the future is “self-motivation” and “motivation for others”. This result can relate to the Theory of Planned Behaviour, presented in research previously conducted (Zhu et al., 2017), which states that the primary predictor of behaviour is one's intention to engage in that behaviour. Planning behaviours, in this case, the potential social-sharing of workout results on Instagram, will increase the likelihood of being exposed to others, while also indicating a degree of favourability or unfavourability towards exercise. The information that is offered to the user during the social-sharing process in the form of followers' “likes” and comments on posts may reflect feelings and drivers created by planning the sharing behaviour (Zhu et al., 2017). In this case, this impacts social and individual factors that may trigger motivation. Additionally, the willingness to motivate others by social-sharing WFT results on Instagram may be influenced by social factors such as peer reinforcement or the willingness to be a role model to others, which may result in an enhanced technology adoption and sustainability in its use (Canhoto, Arp, 2016). In summary, peer and

follower motivation could serve as drivers for awareness and intnetions, which are precursors to exercise attitudes and social-sharing (Edney et al., 2018).

Factors to consider when sharing workout results on Instagram for non-sharers

Figure 9 represents the factors that current non-sharers would consider important to start and sustain sharing on Instagram. Participants responded to a multiple choice of seven options. The majority of respondents (55.7 %; n = 34) marked "Motivation" as the most important factor, followed by "Promoting the adoption of exercise" (54.1 %; n = 33); "Accountability" (44.3 %; n = 27); "Workout Engagement" (32.8 %; n = 20); "Long-term commitment" (21.3 %; n = 13); and "Comply with my followers" (8.2 %, n = 5).

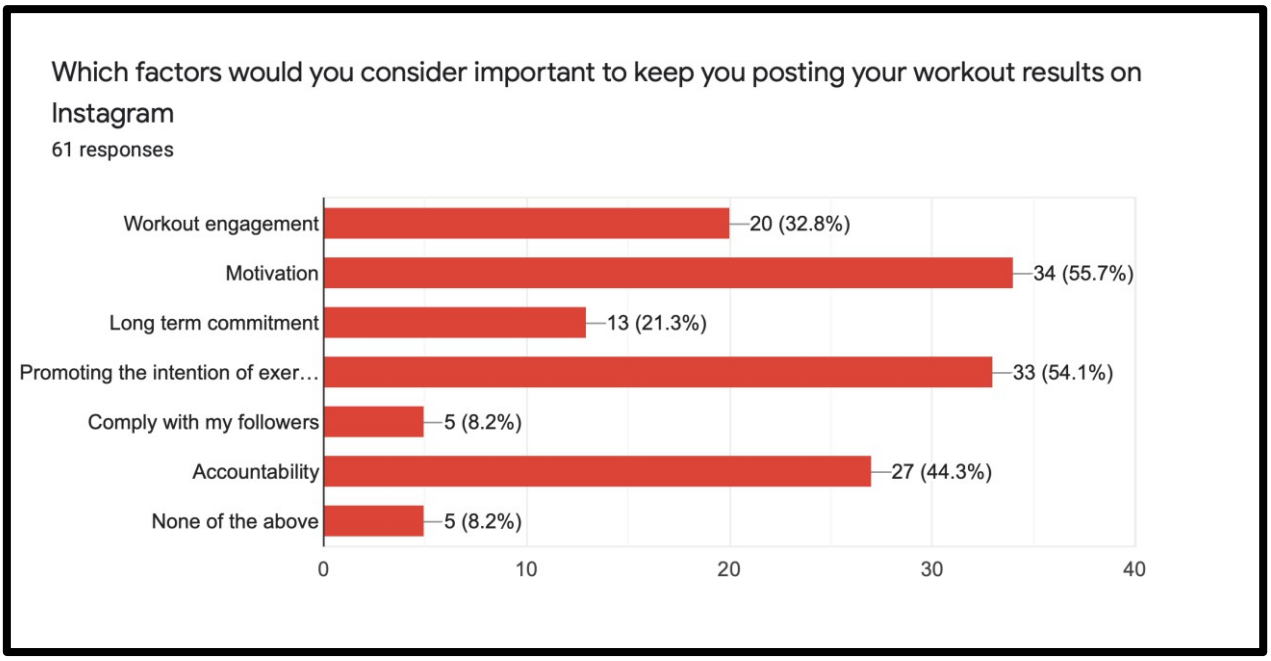

Fig. 9. Factors that current non-sharers would consider important to start and sustain sharing on Instagram

The choice of factors by the respondents presented similarities with those who are current social-sharers. The two most important factors that more than half of the participants valued for posting WFT workout results on Instagram were, (1) motivation, and (2) promoting the adoption of exercise behaviour. In third place, and in contrast with the findings obtained from sharers, "Accountability" appears as an essential factor to consider for non-sharers. This factor is related to sharing common interests with a potential community. Given that respondents answered based on the hypothetical case that they started sharing, this may include a desire for reciprocity or to share the experience with others, as well as an understanding that the people with whom they would be sharing were in a similar situation, thus helping users and themselves remain accountable (Munson, Consolvo, 2012). Also, so many of our daily actions are shared with others online. Social-sharing and competition may also have a role in predicting exercise habits and might even impact individuals who do not actively utilise fitness devices (Zhu et al., 2017). These findings determine that sharing on Instagram is potentially effective for feeling supported, supporting others, and staying accountable for exercise for those users who start sharing workout results.

Instagram audience

Workout result posts exposure

To obtain insights about the effects created by Instagram posts about workout results, we asked the 111 respondents to answer from their Instagram audience perspective if they ever saw posts of workout results and what effects they experienced from seeing others' posts.

Figure 10 shows that most respondents saw workout results posted by their "friends" on their Instagram feeds (94.6 %; n = 105).

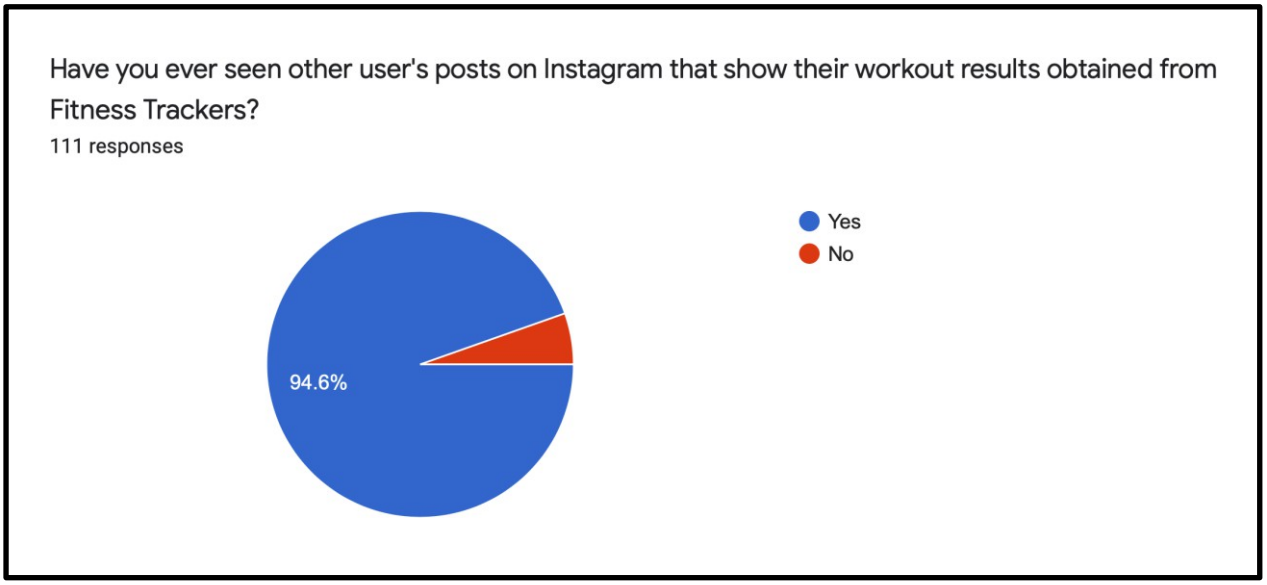

Fig. 10. Users that have seen workout result posts on Instagram.

This result is expected because the target population and participants self-selected for this study are fitness enthusiasts who work out regularly (100 %; n = 111), WFT (95.5 %; n = 106) and Instagram users (100 %; n = 111). Hence, their online community of "followers" and "friends" is like-minded, and the probability of being exposed to workout results posts is enhanced.

Effects experienced from the Instagram audience perspective

Figure 11 shows the effects that users experience from seeing others' posts about workout results. Participants responded using a multiple-choice question of five options. "Motivation" (54.3 %; n = 57) is the most commonly reported effect, followed by "engagement in own workout" (29.5 %; n = 31), "commitment" (28.6 %; n = 30), and "behaviour adoption" (19 %; n = 20).

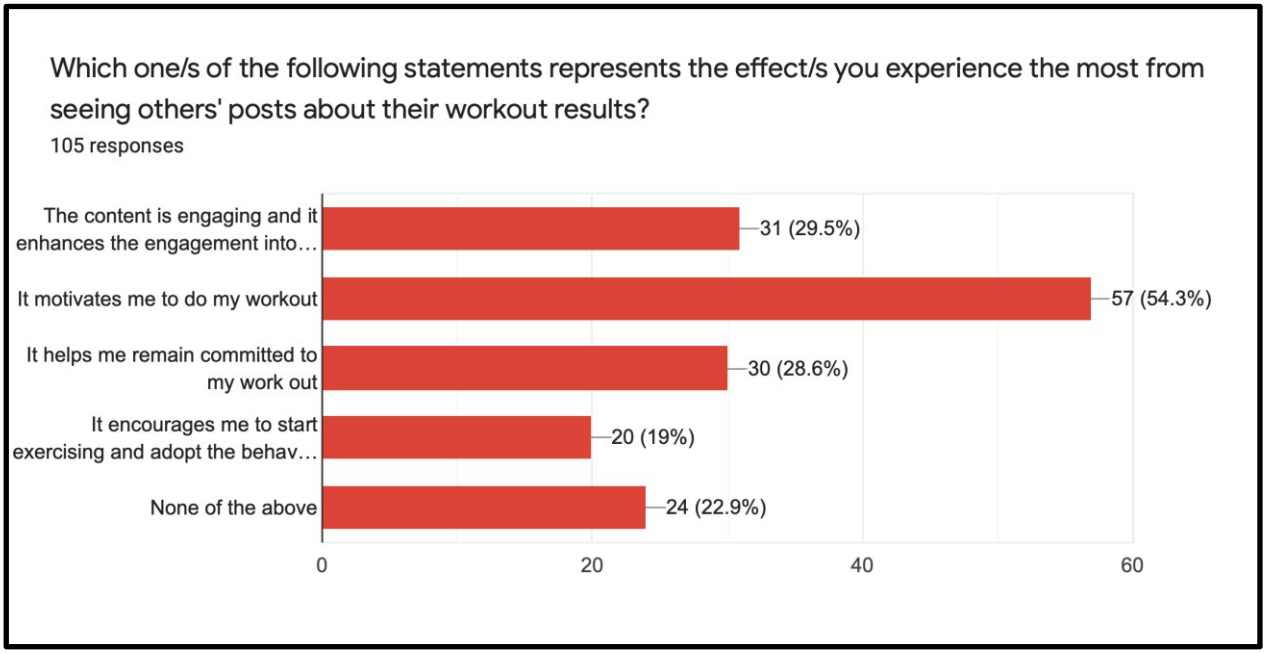

Fig. 11. Effects that users experience from seeing others' posts about workout results

Findings from the Instagram audience perspective coincide with the previous results about sharers and non-sharers' points of view. These findings suggest that the impact created by posts about WFT results on Instagram on the sharer community regarding exercise intentions is significantly related to motivation, which may relate to the dual role of workout result sharing on

Instagram: self tracking sharing and competitive motivation, which allow the audience to compare themselves with others (Kent, 2020), stimulating their willingness to exercise, which impacts users' motivation. When users are exposed to posts that show high levels of physical achievement or successes, this impacts their self-motivation. It is shown in existing research that social-sharing and social competition might serve to remind a person, in this case, the audience, of their exercise potential and their autonomy in choosing individual exercise behaviours (Zhu et al., 2017), hence making them feel motivated.

Also, in reciprocity, the recognition given to others at the same fitness level or objectives is understood by previous research as peer reinforcement, which becomes a very important factor in user motivation (Kent, 2020).

5. Conclusion and recommendations

Conclusion

This study aimed to understand if sharing workout results on Instagram effectively drives engagement and motivation in the user's experience, and if sharing workout results on Instagram impacts the user's commitment to physical activity and behavioural adoption.

Among the sociodemographic factors, it is worth noting that most of the participants in this study were female participants, and overall, the sample is, in the majority, young adults. This can be explained by the sort of technology used by WFT, with women being the ones who prefer behavioural-changing technologies, and younger audiences representing more than two-thirds of the Instagram user community.

The most experienced effect from respondents to “why” WFT users share workout results on Instagram was “to encourage others to work out and promote behavioural intentions to exercise”. Within WFT users but non-sharers, the desired effect would be “motivation” for themselves and others if they started sharing this content on Instagram. And those who were exposed to WFT results posts as an audience within the Instagram community experienced an impact on “motivation” also.

Regarding the factors, WFT and Instagram users and social-sharers valued “motivation” as the most important. The “motivation” factor would drive their intentions to start sharing this workout data for users who do not share. Finally, the current study adds to the knowledge about the technology adoption of WFT and its consequent social media interaction, bringing Instagram as the social factor for the first time, investigating specifically the effects of sharing workout results on Instagram. This research demonstrates how this social-sharing behaviour impacts motivation, encouragement and behavioural intentions towards exercising. This study's findings may apply to other health and technology-related research and interventions, in addition to offering a complete picture of how wearable activity tracker data impacts factors that affect exercise intentions and behaviours. With a deeper focus on the behavioural trends on Instagram and supported by the contribution of this research, communicators and practitioners can better understand the influence of social-sharing workout accomplishments and exercise measurements, and the factors that sustain the adoption of this practice.

Recommendations

This study provides insights for future researchers interested in investigating the behaviours and relationship between Instagram users and Wearable Fitness Trackers regarding social-sharing. The results offer valuable insights about the effects and factors that support the social-sharing behaviour of workout results and help understand the main perceived effects experienced by users in this practice to support future behaviour interventions in the field.

First and foremost, Instagram appears to be the indisputable platform for personal health promotion and identity creation. The present research and background literature review confirm that Instagram achieves better reach and engagement within a younger audience. Its interaction with technology such as wearable fitness trackers and increasing technology adoption also helps predict future behaviour such as sharing tracking data on Instagram to pursue desired effects such as self-motivation and motivation of others.

These findings also suggest that social-sharing practices enhance motivation, engagement and adoption of a healthier lifestyle by inducing exercise behaviour. This study also highlights that different perspectives such as sharers, non-sharers, and audiences are also considered. The contribution obtained from these different points of view allows researchers to focus and investigate deeper into the different valuations of effects that respondents offered. Perceived and desired effects obtained from sharing workout results on Instagram should be investigated in wearable fitness device interventions to

enhance physical activity and improve long-term commitment.

For WFT marketers interested in leveraging the sustainable use of their products, designers should consider other ways to facilitate the easy sharing of fitness data on Instagram and create new ways to present their information in Instagram posts and stories. They need to understand that social features and factors and individual motivation help users engage with the device, physical activity and other users.

Findings from this research, together with the review of the background literature, present evidence to suggest that people who share WFT workout results on Instagram are, in general, young fitness enthusiasts who intend to motivate others by social-sharing WFT results on Instagram. Social factors and technological adoption may influence this. The sustainability of this social-sharing and exercise behaviour can be enhanced by follower support and/or being a role model to others, and self-motivation, which serve as drivers for engagement and accountability. These two factors are the precursors to exercising and social-sharing data on Instagram.

We now understand that sharing workout results on Instagram has perceived and desired effects on motivation, engagement and promotion of exercise, which positively impacts greater adherence to adopting a behaviour change towards exercising. As a result, this study provides critical insights for academics and researchers who will conduct additional research on social media-based health promotion and intervention initiatives, as well as strategies for maximising their research potential.

Limitations of the study

There are certain limitations to the study. First, this cross-sectional design only obtained responses from current Instagram and/or WFT users. Although we were able to include responses from those who do not share their workout data on Instagram to obtain insights about their exposure to WFT data on Instagram posts, we were unable to incorporate non-user samples, which would be suitable for a longitudinal study to investigate the rising effects of new users who share WFT results on Instagram for a period, hence an elaborate hypothesis to test or raise a new theory about this behaviour. This may result in a bias in the results, even though the age groups in general, and users, were in the clear majority included in the targeted population. Given that 77 per cent of respondents were inside the limits of the target population, and further findings show that there are no substantial differences in the older population's behaviour, the results included all participants' answers.

Competing interests
There are no competing interests
Funding
There is no funding for this project
Ethical Approval
Full ethics approval has been obtained for this project
Consent to Participate
Ethical consent to participate in this project has been obtained.
Consent to Publish
Consent to publish findings of the project has been obtained.
Data Availability
Not applicable

References

Buis et al., 2009 – *Buis, L.R., Poulton, T.A., Holleman, R.G., Sen, A., Resnick, P.J., Goodrich, D.E., Palma-Davis, L., Richardson, C.R.* (2009). Evaluating active U: An internet-mediated physical activity program. *BMC Public Health*. 9(1). DOI: https://doi.org/10.1186/1471-2458- 9-331

Canhoto, Arp, 2016 – *Canhoto, A., Arp, S.* (2016). Exploring the factors that drive adoption of wearable technology. *Journal of Marketing Management*. 32(1–2): 1-19. DOI: https://doi.org/10.1080/0267257X.2016.1143857

Carrotte et al., 2017 – *Carrotte, E.R., Prichard, I., Lim, M.S.* (2017). "Fitspiration" on social media: A content analysis of gendered images. *Journal of Medical Internet Research*. 19(3): e95. DOI: https://doi.org/10.2196/jmir.6368

Consolvo et al., 2009 – *Consolvo, S., Klasnja, P., McDonald, D.W., Landay, J.A.* (2009). Goal-setting considerations for persuasive technologies that encourage physical activity. *Proceedings of the 4th International Conference on Persuasive Technology – Persuasive '09*. DOI: https://doi.org/10.1145/1541948.154196

Daniel, Cross, 2018 – *Daniel, W.W., Cross, C.L.* (2018). Biostatistics: A foundation for analysis in the health sciences. Wiley.

Deranek et al., 2020 – *Deranek, K., Hewitt, B., Gudi, A., McLeod, A.* (2020). The impact of exercise motives on adolescents' sustained use of wearable technology. *Behaviour & Information Technology*. 40(7): 691-705. DOI: https://doi.org/10.1080/0144929x.2020.1720295

Edney et al., 2018 – *Edney, S., Bogomolova, S., Ryan, J., Olds, T., Sanders, I., Maher, C.* (2018). Creating engaging health promotion campaigns on social media: Observations and lessons from Fitbit and Garmin. *Journal of Medical Internet Research*. 20(12): e10911. DOI: https://doi.org/10.2196/10911

Gupta et al., 2021 – *Gupta, M., Sinha, N., Singh, P., Liébana-Cabanillas, F.* (2021). Instagram advertising among young consumers in wearable fitness trackers: The moderating role of technology acceptance factors. *Journal of Global Marketing*. 1-22. DOI: https://doi.org/10.1080/08911762.2021.1931616

Harrison et al., 2015 – *Harrison, D., Marshall, P., Bianchi-Berthouze, N., Bird, J.* (2015). Activity tracking. *Proceedings of the 2015 ACM International Joint Conference on Pervasive and Ubiquitous Computing – UbiComp '15*. DOI: https://doi.org/10.1145/2750858.2805832

Joines, 2020 – *Joines, N.* (2020, February 12). Great reasons to use a fitness tracker. Healthcare Technology. [Electronic resource]. URL: https://www.healthtechzone.com/topics/healthcare/articles/2020/02/12/444439-great-reasons-use-fitness-tracker.htm (date of access: 09.12.2022).

Kent, 2020 – *Kent, R.* (2020). Self-tracking health over time: From the use of Instagram to perform optimal health to the protective shield of the digital detox. *Social media + Society*. 6(3): 205630512094069. DOI: https://doi.org/10.1177/2056305120940694

Kreitzberg et al., 2016 – Kreitzberg, D.S., Dailey, S.L., Vogt, T.M., Robinson, D., Zhu, Y. (2016). What is your fitness tracker communicating? Exploring messages and effects of wearable fitness devices. *Qualitative Research Reports in Communication*. 17(1): 93-101. DOI: https://doi.org/10.1080/ 17459435.2016.1220418

Maher et al., 2014 – *Maher, C.A., Lewis, L.K., Ferrar, K., Marshall, S., De Bourdeaudhuij, I., Vandelanotte, C.* (2014). Are health behaviour change interventions that use online social networks effective? A systematic review. *Journal of Medical Internet Research*. 16(2): e40. DOI: https://doi.org/10.2196/jmir.2952

Millington, 2017 – *Millington, B.* (2017). Historicizing fitness technology. *Fitness, Technology and Society*. 23-42. DOI: https://doi.org/10.4324/9781315669748-2

Munson, Consolvo, 2012 – *Munson, S., Consolvo, S.* (2012). Exploring goal-setting, rewards, self-monitoring, and sharing to motivate physical activity. *Proceedings of the 6th International Conference on Pervasive Computing Technologies for Healthcare*. DOI: https://doi.org/10.4108/icst.pervasivehealth. 2012.248691

Nielsen Inc., 2017 – Nielsen Inc. Who's wearing wearables? Number of kiwis owning wearable devices doubles in 12 months. Nielsen | Audience is Everything – Nielsen. [Electronic resource]. URL: https://www.nielsen.com/au/en/insights/article/2017/whos-wearing-wearables-number-of-kiwis-owning-wearable-devices-doubles-in-12-months/ (date of access: 04.11.2021).

Prichard et al., 2020 – *Prichard, I., Kavanagh, E., Mulgrew, K.E., Lim, M.S., Tiggemann, M.* (2020). The effect of Instagram #fitspiration images on young women's mood, body image, and exercise behaviour. *Body Image*. 33: 1-6. DOI: https://doi.org/10.1016/j.bodyim.2020.02.002

Raggatt et al., 2018 – *Raggatt, M., Wright, C.J., Carrotte, E., Jenkinson, R., Mulgrew, K., Prichard, I., Lim, M.S.* (2018). "I aspire to look and feel healthy like the posts convey": Engagement with fitness inspiration on social media and perceptions of its influence on health and wellbeing. *BMC Public Health*. 18(1). DOI: https://doi.org/10.1186/s12889-018-5930-7

Saunders et al., 2019 – *Saunders, P.M., Thornhill, A., Lewis, D.P.* (2019). Research methods for business students. Pearson Higher Ed.

Statista, 2020 – Statista. Topic: Fitness trackers. 2020. [Electronic resource]. URL: https://www.statista.com/topics/4393/fitness-and-activity-tracker/ (date of access: 07.10.2021).

Strauss, 2002 – *Strauss, B.* (2002). Social facilitation in motor tasks: A review of research and theory. *Psychology of Sport and Exercise*. 3(3): 237-256. DOI: https://doi.org/10.1016/s1469-0292(01)00019-x

Tiggemann, Zaccardo, 2016 – *Tiggemann, M., Zaccardo, M.* (2016). 'Strong is the new skinny': A content analysis of #fitspiration images on Instagram. *Journal of Health Psychology*. 23(8): 1003-1011. DOI: https://doi.org/10.1177/1359105316639436

Vaterlaus et al., 2015 – *Vaterlaus, J.M., Patten, E.V., Roche, C., Young, J.A.* (2015).

#Gettinghealthy: The perceived influence of social media on young adult health behaviours. *Computers in Human Behaviour*. 45: 151-157. DOI: https://doi.org/10.1016/j.chb.2014.12.013

Venkatesh et al., 2012 – *Venkatesh, V., Thong, J.Y.L. Xu, X.* (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly*. 36(1): 157. DOI: https://doi.org/10.2307/41410412

Vooris et al., 2019 – *Vooris, R., Blaszka, M., Purrington, S.* (2019). Understanding the wearable fitness tracker revolution. *International Journal of the Sociology of Leisure.* 2(4): 421-437. DOI: https://doi.org/10.1007/s41978-018-00022-y

Zhao et al., 2008 – *Zhao, S., Grasmuck, S., Martin, J.* (2008). Identity construction on Facebook: Digital empowerment in anchored relationships. *Computers in Human Behaviour*. 24(5): 1816-1836. DOI: https://doi.org/10.1016/j.chb.2008.02.012

Zhu et al., 2017 – *Zhu, Y., Dailey, S. L., Kreitzberg, D., Bernhardt, J.* (2017). "Social Networkout": Connecting social features of wearable fitness trackers with physical exercise. *Journal of Health Communication*. 22(12): 974-980. DOI: https://doi.org/10.1080/10810730.2017.138261