

The motivation for healthy lifestyle habits amongst South African urban corporate consumers

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DECLARATION

I, Yolande du Preez, hereby declare that:

The motivation for healthy lifestyle habits, amongst South African urban corporate consumers

represents my own work and that this dissertation is submitted at the North-West University for the purpose of obtaining a master's degree. This dissertation has not been submitted previously for a degree at any other higher education institution. Except for the acknowledged sources, the research in this study is entirely the work of the researcher.



Yolande du Preez

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"I can do all things through Christ who strengthens me."- Philippians 4:13

Most importantly, I would like to thank God for giving me the knowledge, patience and wisdom to complete this degree. Without Him, nothing is possible.

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"We make a living by what we get, but we make a life by what we give"- Winston Churchill

SUMMARY

Consumers' lifestyle habits play a vital role in their overall well-being. In analysing and grasping the role that healthy lifestyle habits play, the motivations that consumers require to adopt and maintain such habits in an urban corporate setting warranted investigation. Research indicates that consumers have been placing more emphasis on their health and lifestyle habits (LH); however, consumers in general often lack the necessary motivations to maintain these healthy lifestyle habits.

In contrast to the emphasis placed on healthy lifestyle habits, there is also a dramatic negative shift in consumers' lifestyle habits due to urbanisation. Poor food choices and a lack of physical activity ascribable to a fast-paced environment may lead to the increasing occurrence of non-communicable diseases (NCDs). According to previous research, NCDs are creating a rapidly growing problem, especially in an emergent country such as South Africa. The South African urban corporate setting exposes consumers to a working environment that is synonymous with high levels of stress and time constraints. It is important to identify what healthy lifestyle habits these consumers exhibit. In addition, it is necessary to determine what their motivations are in adopting additional healthy lifestyle habits.

A gap exists in current research and knowledge concerning consumers' healthy lifestyle habits and the associated situational motivation factors. This study set out to investigate the lifestyle habits of consumers in a South African urban corporate setting in terms of their health and the situational motivations that encouraged them to follow their current lifestyle. Employers tend to rely on external motivational factors such as incentives to motivate consumers, more particularly employees, to engage in health-promoting wellness programmes. However, research has established that this form of motivation does not have a lasting effect on consumers' health. Furthermore, consumers are seemingly unaware of the required motivations for maintaining a healthy lifestyle and the possible positive influence that it may have on their health.

A quantitative, descriptive, cross-sectional survey was employed for this study. Data were collected from South African urban corporate consumers (N= 157) between the ages of 18 and 54 years, using convenience sampling. The instrument for data collection during this study was an electronic questionnaire administered through Question Pro®. Face and content validity were taken into consideration, as was construct validity, using an exploratory factor analysis (EFA) followed by a confirmatory factor analysis (CFA) for the SIMS and lifestyle habits scales (5-point Likert scale). Cronbach alpha values indicated the internal reliability of the yielded factors.

The results indicated that, on average, respondents sometimes to often adhered to “LH food and sleep” (mean = 3.27 ± 0.86). However, “LH exercise and relaxation” (mean = 2.60 ± 0.67) were only seldom to sometimes prevalent in the lifestyles of respondents from this study. Although the response regarding “LH dedicated efforts” (mean = 2.99 ± 0.77) was slightly better than that regarding “LH exercise and relaxation”, responses indicated that it was only sometimes adhered to and, therefore, was not a dominant lifestyle habit amongst respondents. In contrast, habits of not smoking (mean = 4.01 ± 1.43) and not using alcohol (mean = 3.95 ± 1.2) were prevalent. The respondents from this study showed that healthy lifestyle habits were indeed part of their everyday lives; however, not all to the same extent. These discrepancies could be due to certain limitations and challenges that these respondents faced within their work and home environments.

Coinciding with previous research, this study had respondents agree that the leading motivational factors that influenced them to lead their current lifestyle were “intrinsic motivation” (mean = 3.48 ± 0.85) and “identified regulation” (mean = 3.54 ± 0.86). Correlations suggest that as respondents' intrinsic motivation increased, there was an increase in dedicated efforts ($r = 0.270$) and exercise and relaxation ($r = 0.246$) amongst the respondents, respectively. Identified regulation positively correlated with both dedicated efforts ($r = 0.274$) and exercise and relaxation ($r = 0.230$). Identified regulation was the only motivational factor that correlated with respondents' habit not to smoke ($r = 0.277$). Also, respondents disagreed that they considered “external motivation” (mean = 2.72 ± 0.85) and “amotivation” (mean = 2.45 ± 0.91) to be the main reasons for leading their current lifestyle. The results obtained in this study suggest that the respondents were more reliant on internally regulated motivational factors rather than external motivational factors.

In conclusion, even though all of the different situational motivational factors were prevalent in this study, it was to different extents. The respondents were seemingly goal-oriented and concerned with the benefits of their choices and, to a lesser extent, motivated by external stimuli or rewards associated with certain behaviours. This study's findings highlight the importance of sustainable motivation programmes in encouraging consumers to maintain healthy lifestyle habits. Therefore, the findings concur with literature stating that organisations should shift their approach to internally regulated motivation rather than externally driven motivation. Thus, the study contributes to a better understanding of the healthy lifestyle habits of urban corporate consumers and creating awareness amongst employers and employees about which situational motivational factors are associated with maintaining healthy lifestyle habits.

CONCEPT CLARIFICATION

The following concepts are used throughout the study and are, therefore, defined below.

Corporate setting	A corporation refers to a business enterprise viewed as an independent legal entity led by directors (EntrepreneurSouthAfrica, 2019). Therefore, it can be assumed that corporate settings collectively refers to a business environment. In the present study, such a setting entails the working environment in a financial institution within urban areas where consumers experience high levels of stress, extended commuting hours and a fast-paced working day.
Habits	The Cambridge Dictionary (2019), describes habit as an action that is repeated often. Habits can also be formed through instrumental conditioning by repeating a specific behaviour (Crous, 2014:171). The present research investigates habits as part of a healthy lifestyle, which implies that repeated actions (habits) by consumers often influence the healthiness of their lifestyle (what consumers do).
Healthy lifestyle	A healthy lifestyle often refers to individuals' eating and exercising patterns as well as leading a balanced life (Livehealthyoc.org, 2017; Ungerer, 2014:427), which lowers the risk of illness (WHO, 1999). The present study thus found that certain factors can influence a healthy lifestyle. Examples are: exercise, choice of nourishment, work-related stress, emotional well-being, and individuals' work environment. These aspects circumscribe a healthy lifestyle and will be applied to the urban corporate setting, which was chosen as the context of this study.
Lifestyle	Lifestyles, in general, refer to the decisions consumers make in their lives (Ungerer, 2014:427), based on their personal opinions, interests, and activities (Jansen van Rensburg, 2014:57).

	In this study, lifestyle summarises the habits consumers follow and their preferences when expressing themselves.
Motivation	The term motivation refers to the driving force that directs individuals to behave in a particular manner and inspires them to take prompt action (Botha, 2019:27; Shrosbree, 2014:74). This study evaluates and discusses individuals' motivation to pursue a healthy lifestyle.
Situational motivation	Individuals experience situational motivation when engaging in an activity or situation impacted by external factors (Guay <i>et al.</i>, 2000:176). In this study, situational motivation describes the reason (or rationale) for consumers to choose their current lifestyle habits.

(References are included in chapter 1)

KEYWORDS

- Consumers
- Corporate setting
- Habits
- Healthy lifestyle
- Motivation
- South Africa

LIST OF ABBREVIATIONS

ANOVA	Analysis of variance
CFA	Confirmatory factor analysis
EFA	Exploratory factor analysis
HREC	Health Research Ethics Committee
KMO	Kaiser-Meyer-Olkin
LH	Lifestyle Habits
NCD	Non-communicable disease
NWU	North-West University
SCS	Statistical Consultation Services
SDT	Self-determination theory
SIMS	Situational Motivation Scale
SPSS	Statistical Package for the Social Sciences
WHO	World Health Organisation

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CHAPTER 1

INTRODUCTION

Undoubtedly, consumers worldwide are becoming aware of their health and are placing increasing value on healthy lifestyle habits and wellness (Barauskaite *et al.*, 2018:59; Chong *et al.*, 2020:e17544; Lundkvist *et al.*, 2010:616). In the context of the present study, individuals' habits are linked to their intended actions to follow and maintain a healthy lifestyle. Globally, it is a well-known fact that a healthy lifestyle influences consumers' productivity in the workplace (Horowitz, 2020; WHO, 2020).

This study intends to gain a deeper understanding of the lives of consumers in a South African urban corporate setting, by looking at their lifestyle habits and motivations. Healthy lifestyle habits and its underlying motivation are of particular concern to the following stakeholders: 1) consumers in an urban corporate setting since such an impetus may influence their overall well-being; and 2) employers, seeing that this driving force will affect their employees' productivity. The healthy lifestyle habits of interest include the following aspects: exercise, food choice, and managing work-related stress (Wagner & Brath, 2012:S40), which may impact individuals' emotional well-being and functioning within the work environment (Gustafson, 2017).

For the purpose of the present study, consumers refer to employees within a South African corporate context. Consumers, who are employed in an urban corporate work setting, may encounter problems caused by the demands of the urban lifestyle environment. These demands include daily routines such as extended travelling distances and a stressful work environment, which may lead to an unbalanced diet and low activity levels (Allen *et al.*, 2017:284).

1.1. BACKGROUND AND MOTIVATION

1.1.1. Consumer health and non-communicable diseases

People's health can be considered their most valuable life asset (Grové & Wilders, 2009:39). Presently, being healthy has a profound impact on consumers' lifestyle (Lundkvist *et al.*, 2010:616). The reasons are, among others, the nutritional benefits gained from healthy living, or even addressing social concerns such as being accepted by peers and more so being noticed within a specific reference group (Barauskaite *et al.*, 2018:59). According to the World Health Organisation (WHO, 1999), health can be viewed as a multi-disciplinary field that

incorporates various dimensions of well-being, namely mental, emotional, physical, and social. Well-being can, therefore, be described in physical and biological terms as well as subjectively, for example, as a state of happiness (Suranyi-Unger Jr, 1981:132). Several other aspects can be linked to an individual's overall well-being. These aspects include wealth, income, social status, and accomplishments, all of which consumers encounter within a social setting (Gibbs, 2004:7). Positive subjective well-being is usually accompanied by improved work performance, increased creativity and sound social relationships (Diener *et al.*, 2018:253).

The continually changing lifestyles and growing affluence of consumers have increased the prevalence of NCDs worldwide (Griffiths, 2010:110S; Kassa & Grace, 2019:6). Statistics indicated that, during the first decade of the 21st century, NCDs caused approximately 71% of the total annual deaths (WHO, 2018a). During 2018, NCDs accounted for 15 million deaths among individuals aged 30 to 69 years (WHO, 2018a). Studies show a direct correlation between incidences of NCDs and an increase in age (Oni *et al.*, 2015:3; Zungu *et al.*, 2019:8). Furthermore, NCDs are emerging in both rural and urban areas, increasing the burden on healthcare services (Jarvis *et al.*, 2016:456; Mayosi *et al.*, 2009:934).

The most recent statistics indicate that the struggle against NCDs (Oni *et al.*, 2015:7) accounts for more than 39% of deaths in South Africa; mostly due to consumers' unhealthy lifestyle habits (Nojilana *et al.*, 2016:436). In the South African context, these unhealthy lifestyle habits may include smoking, inactivity, excessive alcohol use, and unhealthy food choices (Cureau *et al.*, 2018:756; Millarini *et al.*, 2019:89; Yang *et al.*, 2012:302). However, maintaining habits of a healthy lifestyle can increase consumers' life expectancy through fewer incidences of cardiovascular diseases, cancer, diabetes and, eventually, mortality (Li *et al.*, 2020:7).

1.1.2. Trends and challenges of healthy lifestyle habits

Various trends and challenges affect the health of consumers, although certain tendencies may be misleading (Temmers, 2017). Technology plays an essential part in present-day society (Stiglbauer *et al.*, 2019:131). Information and communication technology provides consumers with personal health information on an easily accessible platform (Gay & Leijdekkers, 2015:1). In time, the obtained information allows them to manage their well-being effectively (Chong *et al.*, 2020:e17544; Dennison *et al.*, 2013:e86; Stiglbauer *et al.*, 2019:131). Consumers can use *wearable technology* as devices to track not only their steps, distance, and time of activity; they can also determine other health aspects such as heart rate, quality of sleep, intake of food calories, and calories burnt (Dennison *et al.*, 2013:e86; Lunney *et al.*, 2016:114). Recent studies showed that self-tracking devices may improve the health of

consumers and enhance their well-being (Hänsel *et al.*, 2015:158; Stiglbauer *et al.*, 2019:131). The reason is that these devices provide consumers with a heightened sense of accomplishment and perceived physical health (Stiglbauer *et al.*, 2019:135).

Furthermore, Lunney *et al.* (2016:118) suggest that the use of the mentioned wearable technology potentially improves consumers' healthy lifestyle habits. In other words, the devices may make them feel healthy and eventually help change their behaviour in this regard. Such devices could be useful aids to track lifestyle habits such as fitness, activity, sleeping patterns and heart rate, and even function as self-motivation tools (Chong *et al.*, 2020:e17544). Examples of these wearable technology devices are smartwatches, activity trackers and fitness applications (Gay *et al.*, 2015:1; Stiglbauer *et al.*, 2019:131; Temmers, 2017). Wearable technology was predicted to be the most prevalent fitness trend in 2019 (Thompson, 2018:12).

Social media currently is a further prominent trend that motivates consumers to lead a healthy lifestyle (Dabek, 2020:2). Web-based programmes and social-media platforms have stimulated consumers' motivation to exercise. However, internal motivation plays a significant role in consumers' adherence to and maintaining of healthy lifestyles (Dabek, 2020:2). Social-media platforms, such as Facebook, YouTube, Instagram and Twitter, enable consumers to share information online (Norman, 2012:3; Toivonen *et al.*, 2019:298). These platforms have provided more opportunities for consumers to search for health information (Fernández-Luque & Bau, 2015:68; Pálsdóttir, 2016:220), publish workouts, share ideas (Johnston & Davis, 2019:119), communicate with friends and follow inspiring fitness pages (Timmers, 2017).

However, most individuals using social-media platforms may find a peculiar challenge. These platforms may instil a behaviour of drawing social comparisons (Lee, 2014:253). Such comparisons make individuals vulnerable by exposing them to unrealistic lifestyle and health goals. In addition, users who follow Instagram, encounter influencers who post *fitspiration*, or content that inspires consumers to follow a physically-active lifestyle. Thus, such users often are left displeased with their own physical condition (Dabek, 2020:8; Deighton-Smith & Bell, 2018:479). Thus, by socially comparing themselves, individuals' mental well-being is harmed and the progress in their physical well-being impeded. Individuals may gain numerous benefits from health and fitness promotion on social-media and web-based platforms. Nevertheless, the content displayed on these platforms may be detrimental to particular populations (Dabek, 2020:9; Pálsdóttir, 2016:225), for example, women who strive to achieve unrealistic figures portrayed by social media influencers.

Holistic health is the overarching term that describes several dimensions of individuals' needs to improve their overall health, namely socially, physically, and psychologically (Council of Holistic Health Educators, 2018). Holistic health can thus be a tool and/or measurement that helps individuals consider and maintain a balanced lifestyle (Villanueva, 2018). Therefore, achieving holistic health has become a significant trend and goal for most consumers.

Various healthy lifestyle trends form part of present-day society. However, certain factors challenge consumers who wish to maintain healthy lifestyle habits within an urban corporate setting. Consumers have to contend with commuting long distances, unfavourable working hours, traffic conditions, and personal stress. Such factors impact individuals' holistic health (i.e. in terms of all three above-mentioned dimensions). The result may be unsound decisions or habits regarding their lifestyle and health (Allen *et al.*, 2017:284).

1.1.3. Lifestyle habits

Individuals follow healthy lifestyle habits with the intention to prevent various health-related problems (Bayod & Arnosa, 2021:25; Urbano *et al.*, 2021:2). Globally, consumers place increasing value on their healthy lifestyle habits and wellness. These health aspects provide a solid foundation for their well-being (Kravchenko, 2020:55). Factors that often influences consumers' wellness-oriented lifestyle include nutrition, fitness, sleep patterns, stress, and the work environment (Kraft & Goodell, 1993:18). Furthermore, consumers' health may be challenged by unsound habits such as reduced activity levels, as well as unhealthy diets such as excessive alcohol consumption, high carbohydrate intake, and insufficient fruit and vegetables (Allen *et al.*, 2017:284). Research indicates that consumers' sedentary lifestyles increase over weekends, as consumers are prone to consume foods with higher energy levels, leading to a decrease in healthy lifestyle habits (McCarthy, 2014:55).

Reeves and Rafferty (2005:854), identify four characteristics of a healthy lifestyle: healthy weight, leisure time, non-smoking, and eating nutritious food. Belloc and Breslow (1972:46-64) identified seven healthy lifestyle habits, namely non-smoking, moderate-intensity physical activity two to three times per week, moderate to no alcohol consumption, seven to eight hours of sleep per night, maintenance of body weight, daily consumption of breakfast and regular consumption of three meals per day. In this regard, the present study investigated a more comprehensive list of characteristics as outlined by Belloc and Breslow (1972:46-64), supplemented by Walker *et al.* (1995). These traits, discussed as background to this study, are grouped into food-consumption behaviour, physical activity, sleeping and stress habits, emotional well-being, and the use of leisure time. These characteristics are explicated in the

following sections as a collective contribution to consumers' healthy lifestyle habits within an urban corporate setting.

1.1.3.1. Food consumption behaviour

Consumers pay increasing attention to the health benefits provided by food (Santeramo *et al.*, 2018:42). For consumers, health has developed into an important personal and societal value (Barauskaite *et al.*, 2018:59; Goetzke *et al.*, 2014:96). Khan *et al.* (2013:27) report that globally, functional foods emerged as a major trend and form an integral part of consumers' daily diet. Functional foods can be described as food products that provide health benefits for consumers (Barauskaite *et al.*, 2018:59) and reduce the risk of diseases (Jauho & Niva, 2013:52; Roberfroid, 2000:1660S). Such health-oriented foods contain nutrients such as vitamins, dietary fibre, calcium, Omega-3 fatty acids, and minerals (Kraus, 2015:1628).

Functional foods, as a global trend, are driven by consumers' increased awareness of the nutritional benefits of certain foods and being conscious of their own health (Barauskaite *et al.*, 2018:59). There is a controversy where certain studies indicate that functional food products grant consumers a "shortcut to health". The opposite view is that functional foods make it relatively easy for consumers to maintain a healthy lifestyle (Jauho & Niva, 2013:52). This is accomplished by consuming functional foods to meet moral obligations in their pursuit to become or stay fit (Jauho & Niva, 2013:54). Conversely, Barauskaite *et al.* (2018:60) point out that consumers' selection of foods often does not reflect a motivation to pursue a healthy lifestyle. Instead, other motives may drive their choice of food consumption, for example, to impress friends, gain social acceptance, or enjoy perceived self-control.

Furthermore, sedentary behaviour, especially watching excessive Television, may lead to unhealthy food choices, which may affect diet quality (Hobbs *et al.*, 2015:9). Such diets are also characterised by higher intakes of alcohol and fat, which implies higher energy consumption (Labuschagne *et al.*, 2011:91; McCarthy, 2014:55). Taste is another predominant factor that influence consumers' food choices. Consumers tend to rather focus on taste than healthy food choices (Liem & Russell, 2019:6) regardless of the nutritional benefits (Glanz *et al.*, 1998:1118; Lennernäs *et al.*, 1997:S8). The sedentary behaviour of consumers may therefore cause the development of hypokinetic diseases and reduced productivity (Labuschagne *et al.*, 2011:81). Urban consumers whose lifestyles are characterised by extended working hours, being seated behind desks, or travelling long distances, are less inclined to be physically active (Thendo *et al.*, 2013:999; Mazzola *et al.*, 2017:483); they rather engage in sedentary behaviours.

1.1.3.2. Physical activity

Presently, consumers are increasingly becoming aware of their lifestyle habits and seek a healthy orientation. Nevertheless, physical inactivity is becoming a problem in modern society (Labuschagne *et al.*, 2011:91; WHO, 2019). A recent study by Dabek (2020:2) confirmed that numerous individuals do not consider exercise and health-related behaviour a priority. Additionally, it is essential that individuals participate in exercise (physical activity) since it may lessen the possibility of NCDs such as cardiovascular diseases or obesity, thereby having a positive long-term effect on their health (Dabek, 2020:2; Reiner *et al.*, 2013:1).

The WHO (2018a) identified physical inactivity as a key risk factor leading to deaths globally. Insufficient physical activity was identified as the fourth-highest contributor to global mortality in 2012 (Kohl *et al.*, 2012:294). Furthermore, worldwide, 23% of adults fail to engage in adequate physical activity (WHO, 2019). In South Africa, more than 60% of older adults reportedly engaged in physical activities (Peltzer & Phaswana-Mafuya, 2012:457). Furthermore, the WHO (2019), points out that consumers' levels of inactivity increase due to factors such as technology, transportation, and urbanisation – which influence the patterns of their daily activity.

Employees (who are also consumers in the context of this study), especially top- and middle-level executives, do not find sufficient time for physical activity, due to their workload (Thendo *et al.*, 2013:999). For transportation in urban- designed areas, consumers favour vehicles rather than walking or cycling (WHO, 2019). As indicated previously, technology is also a significant factor that help cause inactivity (Grové & Wilders, 2009:39; Labuschagne *et al.*, 2011:91). Employees are expected to work on computers, which means they remain seated for an extended period, prone to being passive (Straughan, 2005:276). A recent study indicated that individuals, who form part of a wider social network, tend to be physically more active by exercising, than those involved in a more close-knit network (Josey & Moore, 2018:62). Reasons for physical inactivity are the threat of outdoor violence (particularly in a South African context), insufficient recreation facilities such as parks, or the health risk of pollution (WHO, 2019).

The above-mentioned contributing factors should be dealt with since a decline in physical activity can cause various NCDs such as excess body fat, obesity, diabetes, cardiovascular diseases, hypertension and cancer (Bauman *et al.*, 2012:258; Labuschagne *et al.*, 2011:91; Miles, 2007:337-344). By examining these factors, researchers may improve their understanding of consumers' motivation to engage in physical activity and follow their chosen lifestyle.

1.1.3.3. Sleeping

Sleep is regarded as essential for the entire body to function properly (Horowitz, 2020; Lin *et al.*, 2018:387; Schwarz *et al.*, 2018:165). During sleep, there is an ongoing process of physiological, psychological, and neural recovery (West, 2018:38). Individuals are aware that maintaining sound sleeping habits is vital to ensure a healthy lifestyle, however, it has been proven difficult to maintain such habits. Therefore, injudicious sleeping habits may lead to chronically impaired health (Pilcher & Morris, 2020:6). Insomnia, also known as sleep deprivation, can be defined as obtaining insufficient sleep (Horowitz, 2020). When a person suffers insomnia, this may affect various general health aspects such as lower energy levels, inability to manage stress effectively (Schwarz *et al.*, 2018:161), and decreased productivity (Horowitz, 2020; Pilcher & Morris, 2020:1). Such impediments may cause further chronic health problems such as obesity, high blood pressure, diabetes, cancer, and depression (EClinicalMedicine, 2019:1; Horowitz, 2020; Xu *et al.*, 2010:78).

Research showed that, generally, 35% of consumers sleep less than eight hours a night (Garmy & Ward, 2018:123). Although research regarding South Africans' sleeping behaviours is limited (Rae *et al.*, 2016:1), statistics on South Africans' sleeping patterns confirm that 30% of individuals reach up to seven hours' of sleep nightly, and only 27% enjoy an adequate eight hours of sleep (BusinessTech, 2019). These unhealthy sleeping habits directly influence consumers' productivity during the day. It is further evident from the literature that unsatisfactory sleeping patterns can lead to, and are caused by, unhealthy lifestyle habits such as inactivity and excessive alcohol use as well as smoking (Horowitz, 2020). Recent studies showed that, presently, a challenge for sound sleeping habits is night-time phone texting (Bjorvatn *et al.*, 2018:192; Exelmans & Van den Bulck, 2016:93; Garmy & Ward, 2018:125). Consumers sleeping with their mobile phone adjacent, experience an increase in deficient or inadequate sleeping patterns (EClinicalMedicine, 2019:1; Garmy & Ward, 2018:125), thereby lowering their quality of sleep (Exelmans & Van den Bulck, 2016:94).

In an urban environment, consumers may experience sleeping disorders by contributing factors such as constant noise (Karami & Frost, 1995:29), stress levels at work (French *et al.*, 2019:145), and stress during travelling, constant traffic, and issues with social acceptance. Further debilitating factors are early-morning commuting, late bedtimes and unhealthy food-consumption habits such as take-aways, on-the-go meals, and frequent snacking (Chaput, 2014:86).

1.1.3.4. Stress

Work-related psychological stress directly impacts on consumers' efforts to maintain a healthy lifestyle (Marcatto *et al.*, 2016:274). Organisations are influenced by the way stress affects their employees' productivity and health within the corporate environment (Corporate Wellness Magazine, 2018; Menze, 2006:124; Rothmann *et al.*, 2005:60). According to *Corporate Wellness Magazine* (2018), 29% of employees suffer from work-related stress, which is proven to become a critical health concern (Marcatto *et al.*, 2016:274).

Furthermore, increased job strain on employees may cause uncontrollable stress levels, which is detrimental to themselves and the company at large (South African Heart Association, 2005:47). Consumers experience stress not only due to work demands. Other aspects, such as job insecurity and work relationships, may also influence stress levels (Tinline & Cooper, 2019). Individuals who experience stress often, tend to refrain from daily exercises and stop maintaining a healthy diet – a lifestyle that may lead to depression (Hayes & Ross, 1986:397). Further stress-related effects are insomnia or other sleeping disorders (Schwarz *et al.*, 2018:155; Van Laethem *et al.*, 2015:391). Consumers may apply several coping strategies to reduce their stress levels. However, whereas certain individuals follow healthy lifestyle habits as coping (e.g. physical activity), others lapse into unhealthy habits, for example, substance abuse or physical inactivity (Farhud, 2015:1443).

1.1.3.5. Leisure time

Leisure time forms an integrated and essential part of present-day society (Yang *et al.*, 2012:302). Over weekends, leisure-time activities increase but do not necessarily include physical activity (McCarthy, 2014:58). The most preferred use of leisure among consumers is watching television (Larsson & Wolk, 2019:562; McCarthy, 2014:58). Such a habit, in turn, may lead to unhealthy food choices and increased energy intake since viewers are distracted by an external stimulus such as watching television (Hare-Bruun *et al.*, 2011:5; Rey-López *et al.*, 2013:1563). According to Barr-Anderson *et al.* (2009:1), when young people watch television as a leisure-time activity during high-school, they may suffer long-term effects of unhealthy lifestyle habits later on in their lives. Banks *et al.* (2010:34) found a definite correlation between the number of hours spent on “screen-time” – following social-media networks and watching television – and obesity, despite the amount of physical activity. The mentioned correlation is due to sedentary lifestyle behaviours, which accompany “screen-time” and increase levels of energy intake (Banks *et al.*, 2010:42), thereby compromising consumers' healthy lifestyle habits.

A further basic leisure-time activity, leading to increased screen-time, is sharing information and connecting with other users through social-media platforms (Johnston & Davis, 2019:119; Toivonen *et al.*, 2019:298). On the other hand, leisure time that includes physical activity may bolster consumers' health (Manley, 1996:4) and reducing the risk of possible NCDs (Warburton *et al.*, 2006:807). Physically active consumers are more productive and experience lower levels of stress, which subsequently increases their overall well-being (Manley, 1996:5). Therefore, firstly, it is necessary to understand the factors that motivate consumers when choosing their current leisure-time activities. The aim would be secondly, finding ways that motivate consumers to engage in physical activity during their leisure time, thereby reaping the intended benefits.

1.1.4. Urban corporate setting

A core characteristic of an urban corporate setting is the high levels of stress that employees have to face (Bunn *et al.*, 2013:14). As mentioned previously, factors contributing to increased stress in the work environment are performance pressure, long-distance travelling and social pressure (Soni, 2013:34). Pressure escalates when employees do not have sufficient time to relax properly, resulting in stress and sedentary and unsound lifestyle habits (Tyrväinen *et al.*, 2014; Wagner & Brath, 2012:S40). The high levels of stress may leave consumers, working in an urban-corporate setting, vulnerable to stressors, which influence their health.

Corporate industries use various interventions such as wellness programmes employees can attend to improve their health. However, in a study by Seifert *et al.* (2012:2), two out of three businesses emphasised the significant challenge to manage affordable healthcare coverage due to employees' injudicious health habits. Businesses generally attempt to motivate employees to participate in wellness programmes that will help improve their lifestyle habits. However, given employees' busy schedules, they often need external motivation such as incentives (e.g. financially) that encourage them to partake in the presented programmes (Berry *et al.*, 2010:2). External motivation is considered less effective in the long term. As a result, internal motivation should be enhanced until the behaviour becomes self-determined and can be maintained (Berry *et al.*, 2010:2; Seifert *et al.*, 2012:5).

1.1.5. Consumers' behavioural motivation

One of the main constructs of the present study is motivation. Consumers are influenced by various internal and external forms of motivation, which determine their lifestyle habits (Botha, 2019:28). The term motivation denotes the various internal reasons (also named "driving force") that influence individuals' behaviour and lead to action (Botha, 2019:27; Shrosbree,

2014:74). According to Botha (2019:27), individuals' motivation is influenced directly by their emotions, which determines how enthusiastically they act. Botha (2019:27) explains that two types of motivation can be distinguished, namely: internal (intrinsic) or external (extrinsic) motivation.

- **Internal motivation:** Entails individual aspects such as personality, consumer needs, personal attitudes, perception, and communication with others in the same social class (Ndwandwe, 2008:2; Seifert *et al.*, 2012:2). Therefore, internal motivation is not influenced by external factors and comes from within a person (Botha, 2019:39).
- **External motivation:** Includes factors such as reference groups, social class, age, culture, and subculture (Ungerer, 2014:406), and incentives offered to maintain a healthy lifestyle.

Furthermore, specific internal and external factors motivate consumers to behave in a certain manner. An example is consumers' values, which directly influence their behaviour and, therefore, play a critical role in their motivation (Botha, 2019:38). Philosopher Edward Spranger, identified six value orientations that direct consumers, linked to a persona: economic, theoretical, power-seeking, social, aesthetic, and religious (The Editors of Encyclopaedia Britannica, 2002; Werner, 2018:334). Each of these consumer values is explained in more detail in the literature-review chapter of this study, since each orientation influences the way a consumer is motivated (Botha, 2019:38).

Several scales have been developed to measure consumers' motivation. However, for the purpose of this study, respondents' motivation to follow a healthy lifestyle was measured by the **Situational Motivation Scale** (SIMS) (Guay *et al.*, 2000:175-213). The SIMS measures the following constructs: (1) intrinsic motivation; (2) identified regulation; (3) external regulation; and (4) amotivation. The measuring takes place through an adaptable and brief self-reporting mechanism. The reason for choosing the particular scale for the main study was that this instrument is designed to be versatile. Furthermore, the SIMS is used to evaluate consumers' direct response towards activities they follow (Guay *et al.*, 2000:176-178) such as lifestyle habits. The motivation that drives consumers when they engage in an activity is known as situational motivation (Vallerand, 1997:271). Guay *et al.* (2000:175-213) grounded the development of the SIMS on the self-determination theory (SDT). (This theory will be expounded further in section 1.1.6.) The individual constructs of the SIMS are discussed briefly below.

As mentioned previously, motivation consists of two main categories, namely, intrinsic (internal) and extrinsic (Ryan & Deci, 2000:54). **Intrinsic motivation** (internal), in this context, implies the satisfaction consumers experience during an activity, free of choice, without external influences (Ryan & Deci, 2000:56; Guay *et al.*, 2000:178; Kowal & Fortier, 2000:172). Conversely, *extrinsic motivation* includes activities and goals beyond the consumers' scope of behaviour (Ryan & Deci, 2000:60). *Situational motivation* refers to the present (here and now) and is thus influenced by various external factors and situations such as competitions, deadlines, and limits (Guay *et al.*, 2000:176).

Amotivation describes the contrast between internal and external motivation (Guay *et al.*, 2000:177; Kowal & Fortier, 1999:358). Consumers who experience amotivation do not act self-determined since they have neither expectations, nor a sense of purpose (Barkoukis *et al.*, 2008:40). These consumers are overcome by uncontrollable feelings of incompetence (Barkoukis *et al.*, 2008:40). Thus, amotivation typically have adverse outcomes (Guay *et al.*, 2000:177).

Identified regulation can be described as the behaviour consumers choose personally (Guay *et al.*, 2000:177). **External regulation** defines how consumers avoid negative consequences through regulated rewards (Guay *et al.*, 2000:177). Consumers behave in a specific manner to avoid disputes or because they are expected to act this way. Alongside external and identified regulation is **integrated regulation**, which entails a balance or harmony between external and identified regulation (Guay *et al.*, 2000:177). Such balance ensures that consumers experience a true sense and integrity. In contrast to integrated regulation, a feeling of guilt leads to *introjected regulation* (Guay *et al.*, 2000:177). However, the latter two forms of regulation were not included in this study, seeing that they do not form part of the SIMS.

The SIMS is measured on a seven-point Likert scale, ranging from “not at all in agreement” (1) to the other extreme, “completely in agreement” (7). As explained above, the four sub-scales are: intrinsic motivation, identified regulation, external regulation and amotivation. Each sub-scale can be broken down into four themes, thus totalling 16 items (Guay *et al.*, 2000:177). The two types of regulations included in the SIMS are components of external motivation. (Each of the four aspects of the SIMS will be discussed more thoroughly in the literature-review chapter of the present study.)

1.1.6. Self-determination theory

The SDT was chosen as the theoretical framework for consumers' situational motivation in this study since it provides the theoretical underpinning of the SIMS as developed by Guay *et*

al. (2000:175-213). The mentioned theory helps explain how consumers are intrinsically and extrinsically motivated (Barkoukis *et al.*, 2008:39). The SDT takes into account the basic needs of consumers, namely autonomy, competence, and relatedness (Deci & Ryan, 2002:7). Each of these needs motivates consumers differently.

Autonomy can be described as the independent choices consumers make to achieve their goals (Deci & Ryan, 2002:8). Consumers typically follow a particular choice since the activity sparks their interest and they derive pleasure from it (Ryan & Deci 2020:60). In the context of the present study, consumers will choose to follow healthy lifestyle habits if they have set a personal goal to maintain such a lifestyle. **Competence** refers to consumers' own habits/preferences focused on achieving success (Deci & Ryan, 2002:7; Ryan & Deci 2020:60). Based on the present study's proposed framework, consumers are driven by success and will sustain healthy lifestyle habits to be effective and competent in their working environment. When a consumer seeks a sense of belonging, the need for **relatedness** emerges (Deci & Ryan, 2002:7; Ryan & Deci 2020:60). Consumers have the need to belong to certain social groups. Therefore, they choose healthy lifestyle habits which the particular social group espouses. Research indicated clearly that consumers from different cultures experience these needs to a certain extent as innate requirements, rather than acquired motives (Deci & Ryan, 2002:7).

1.2. PROBLEM STATEMENT

The following problem that needs to be addressed is that - If consumers fail to engage in healthy lifestyle habits as a preventative measure against NCDs, they may be faced with such diseases, especially when they are employed in stress-prone urban corporate environment. Merely external motivations to follow a healthy lifestyle may not be sustainable within such a context. Internal, situational motivations may give a clearer indication of the reasons that consumers display such habits.

"We live in a fast-paced world and we need to slow down in many areas of our lives" (Mercree, 2019). In current society, consumers are faced daily with numerous decisions. Consumers' motivation drives their decisions directly in various aspects of their lives, at a particular stage. Lifestyle habits are significant, seeing that these do not only affect the employees or consumers, but also employers. Nevertheless, consumers seemingly struggle to adopt healthy lifestyle habits due to a lack of the necessary motivation to initiate and maintain such habits (Lakerveld *et al.*, 2020:464).

Consumers are motivated by various internal and external sources (Reiss, 2012:152). As mentioned previously, organisations encourage consumers who seek external motivations, to partake in wellness programmes that improve their lifestyle habits. The intention is that the external motivations eventually develop into internal ones, as internal motivation has a longer-lasting effect (Botha, 2019:43). The question remains whether consumers maintain healthy lifestyle habits outside the work-environment and what factors motivate them to display such habits.

From the consulted literature, it was found that consumers in an urban corporate environment often have to work extended hours, which may increase levels of stress and impact their lifestyle habits in general (Kawada & Suzuki, 2008:397:403; Sharma & Kundu, 2019:868). The literature reports unhealthy dietary, exercise and sleeping habits of corporate consumers, accompanied by elevated stress levels. Such a combination could lead to lifestyle-related diseases such as NCDs. Thus, research is essential to establish a baseline for the healthy lifestyle habits of consumers within the urban corporate setting and gauge their motivations to follow these habits.

1.3. AIM AND OBJECTIVES

1.3.1. Aim

This study aimed to describe the healthy lifestyle habits and situational motivations driving these habits, amongst consumers in a South African urban corporate setting.

1.3.2. Objectives

In order to reach the above-mentioned aim, the following objectives were proposed:

1. Describe the demographic characteristics of consumers.
2. Determine consumers' healthy lifestyle habits.
3. Establish the situational motivations that drive consumers to pursue healthy lifestyle habits.
4. Examine the associations between the mentioned habits and situational motivations of consumers from different demographic subgroups.

1.4. MAIN RESEARCH QUESTION

In light of the aim stated above, the following main research question can be formulated: *What lifestyle habits do South African urban corporate consumers follow in terms of their health; and which situational motivations encourage them to pursue these habits?*

1.5. OUTLINE OF DISSERTATION

An overview of each chapter is provided as follows:

Chapter 1 introduces the outline and background of this study. Furthermore, this chapter includes an introduction, motivation, and problem statement. Finally, the aims and objectives are presented which guide this study.

Chapter 2 presents and discusses the literature review and theoretical background of consumers' healthy lifestyle habits, as well as their situational motivations to pursue these habits.

Chapter 3 discusses the methodology applied in this study. An in-depth explanation is given of each method that was used. Furthermore, reliability and validity are confirmed as well as ethical considerations addressed.

Chapter 4 comprises the research article. This article presents and discusses the results and findings processed from the data. The interpreted data are linked to existing literature, and after completion, the written research article will be submitted for publication to an accredited scholarly journal. Referencing was done according to the intended journal's prescriptions.

Chapter 5 draws the conclusion for this dissertation. Recommendations are made and limitations pointed out that should be addressed to improve future research.

Reference lists are provided after each chapter, according to the practice of North-West University (NWU) since a research article prepared for a specific journal is included in the dissertation chapters.

1.6. AUTHOR CONTRIBUTIONS

A team of academic researchers established and addressed the aims and objectives of the present study. Each member within the team played a vital role to help complete this study. The table below describes the roles and contributions of each member.

Table 1.1: Summary of authors' contributions to this study

Name	Contribution
Miss Y du Preez First author and Master of Consumer Science student	Responsibilities included obtaining ethical approval, researching previous and relevant literature, statistical analysis, interpretation as well as discussing the results and preparing the dissertation and research article.
Prof M van der Merwe Supervisor, study leader and co-author	The primary investigator of the main study. For this affiliated study, she provided supervision and scientific guidance for the ethical approval process, literature research, interpretation and discussion of the results, and the completion of this dissertation and the research article.
Prof A Mielmann Co-supervisor and co-author	Provided supervision and guidance for the ethical approval process, literature research, interpretation and discussion of the results, and the completion of this dissertation and the research article.
Prof SM Ellis Co-author of the research article	Responsible for statistical analysis and providing expert assistance with the interpretation and discussion of data and results. Assisted with study design, development of the original questionnaire as well as its adaptation for this affiliated study.

DECLARATION OF AUTHORS' CONTRIBUTIONS

I declare that I have approved the above-mentioned article, that my role in the study as indicated above represents my actual contribution and that I hereby give my consent that this article may be published as part of the master's dissertation of Miss Y du Preez.



Miss Y du Preez



Prof M van der Merwe



Prof A Mielmann



Prof SM Ellis

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CHAPTER 2

LITERATURE REVIEW

2.1. INTRODUCTION TO CONSUMERS' HEALTHY LIFESTYLE HABITS IN AN URBAN CORPORATE ENVIRONMENT

Health and lifestyle habits are two components that are of importance in today's society (Barauskaite *et al.*, 2018:59; Grové & Wilders, 2009:39), especially among the more affluent. Research indicates a dramatic shift in consumers' involvement with and decision-making about aspects or habits that enhance not only their own health but also that of their families (Lewis *et al.*, 2005:1). The World Health Organisation (WHO) defines **health** in its constitution as a state of total "*physical, mental and social well-being, and not merely the absence of disease or infirmity*" (WHO, 1948). Physical health refers to balanced nutrition, maintaining regular physical exercise, good sleeping patterns, and overall soundness of the body (Pilgrim, 2019:34). On the other hand, mental health refers to individuals' emotions and their psychological and social well-being (Pilgrim, 2019:23).

Lifestyle entails how individuals live their lives, which involves their type of work, leisure-time patterns, motivations, desires, and needs (Featherstone, 1987:55; Karmee *et al.*, 2017:2905). Leading a healthy lifestyle can lower the risk of developing NCDs such as diabetes, cancer, and cardiovascular diseases (Li *et al.*, 2020:7) and can be advantageous for one's well-being (Velten *et al.*, 2018:2). There has been a dramatic shift in consumers' lifestyles (including dietary behaviour and physical activity) due to rapid urbanisation, the increased availability of processed foods, and changing work environments (Cockx *et al.*, 2019:5). This shift in consumers' lifestyles may lead to unhealthy habits that might accelerate the development of NCDs (Karmee *et al.*, 2017:2905; Cockx *et al.*, 2019:5). These unhealthy habits may include aspects such as the consumption of foods that are high in fats, sodium, energy, or sugar; and a decrease in the consumption of healthy options comprising foods rich in dietary fibres, whole grains, fruit, and vegetables (Department of Health, 2016:16).

NCDs are divided into four main categories, namely diabetes, cancer, chronic respiratory diseases, and cardiovascular diseases, and 71% of all annual deaths are attributed to them (WHO, 2018). Obesity, hypertension, and tobacco addiction are risk factors in the causation of the above-mentioned NCDs (Nojilana *et al.*, 2016:436). NCDs are a growing problem in both developed and developing countries, and especially in low- and middle-income countries (Agrawal *et al.*, 2016:317; Kassa & Grace, 2019:14). As an emergent country, South Africa is highly diverse (Sliwa *et al.*, 2008:915). On the one hand, there is an urban society with high economic and social standards; conversely, there is also an urban society with more traditional

lifestyle habits (SACN, 2016:29). In 2009, there was a projected growth in urbanisation in South Africa of almost 10% every two decades (Tibazarwa *et al.*, 2009:238). Globalisation, together with sedentary (deskbound) lifestyles, may have a negative influence on the health of consumers, with an increase in NCDs (Aboyade *et al.*, 2016:2). Owing to their poor health, urban workforce consumers under the age of 60 years account for 36% of NCD-related deaths (Nojilana *et al.*, 2016:436).

Globally, NCDs in rural and urban communities increase the pressure on acute and chronic health care services, causing great concern regarding mortality from NCDs (Agrawal *et al.*, 2016:317; Mayosi *et al.*, 2009:934). However, South Africa is known in particular for its triple burden of disease profile dividing the attention of prevention programmes between HIV/AIDS, tuberculosis (TB) and NCDs (Department of Health, 2016:13; Nojilana *et al.*, 2016:436; WHO, 2017b:1). Nonetheless, while several consumers have risks associated with NCDs, educational employee-assisted programmes can reduce future illness and improve the physical and mental well-being of consumers (Arena *et al.*, 2016:15).

The **urban environment** is a constantly evolving, diverse and dynamic environment (Bai *et al.*, 2012:465). With global urbanisation increasing yearly (Manegar, 2019:61), more than 50% of populations are already living in urban societies, with the expectation of continued growth (Rukumnuaykit, 2015:99). With the increased expansion of urban societies, the need develops for the investigation and understanding of the well-being of urban consumers in such societies. Bai *et al.* (2012:465) highlight some advantages of living in urban areas, such as better educational opportunities, higher incomes, employment possibilities, and access to health care services. However, a disadvantage that influences the health status of employed consumers in the South African urban corporate environment is their sedentary lifestyles (Pinkstaff *et al.*, 2017:442; Swanepoel *et al.*, 2015:1482).

Urban consumers encounter globalisation more intensely than semi-urban or rural consumers, considering the opportunities available in the form of services, technological goods and a variety of food products (Wagner & Brath, 2012:S40). Globalisation leads to an increased exposure to goods and services, which affects consumers' choices regarding leisure-time activities, commuting and social activities (Wener & Evans, 2011:115). This is one of the factors leading to urban consumers' experiencing high levels of stress due to the demanding corporate work setting (Soni, 2013:34), which affects the physical and mental health of employees negatively (McKenzie *et al.*, 2013:1020).

2.2. DEMOGRAPHIC CHARACTERISTICS IN THE CONTEXT OF CONSUMER LIFESTYLES AND HEALTH

Although habits are more prone to be segmented by psychographic segmentation that includes attitudes and opinions, the easiest and most logical way to segment a generation is by its demographic characteristics, and it is seen as the core segmentation strategy for classifying consumers (Jansen van Rensburg, 2014:53). A demographic group is a group of consumers that are measurable, accessible, substantial, and actionable (Schlegelmilch, 2016:64; Shukla *et al.*, 2013:423). Demographic segmentation refers to demographic factors such as consumers' age, gender, income, education, and occupations (Andaleeb, 2016:182; Elmessory, 2020; Jansen van Rensburg, 2014:54).

2.2.1. Geographic sub-culture

There are various geographic sub-cultures within the South African context, represented by nine provinces, namely: Eastern Cape, Western Cape, Northern Cape, KwaZulu-Natal, Limpopo, Free State, Gauteng, Mpumalanga, and Gauteng. Of these geographic sub-cultures, Gauteng is the province with the largest population, numbering approximately 15.2 million people (25.8% of the South African population) (BusinessTech, 2019; StatsSA, 2019:P0302). KwaZulu-Natal comprises the second-largest population group, with an estimated 11.3 million people (19.2% of the South African population) (StatsSA, 2019:P0302). There is a special relationship between consumers' geographic sub-cultures and their careers, transportation methods, food choices, financial status, and social connections (Avci *et al.*, 2017:96).

2.2.2. Age sub-culture

Consumers' age and generation form part of their age sub-culture (Brewer, 2014:341). Consumers from a specific period are grouped together (generations) as they typically have shared life experiences and therefore tend to exhibit similar needs, habits, and behavioural patterns (Andaleeb, 2016:182; Botha, 2013:208; Weingarten, 2009:27). A study analysing consumers following healthy lifestyles found that older consumers were more likely to follow and maintain healthy lifestyle habits than younger consumers (Divine & Lepisto, 2005:279). However, younger consumers were more inclined to engage in regular physical activity, a finding that is supported by more recent research (Divine & Lepisto, 2005:280; Mlangeni *et al.*, 2018:522). Businesses, in general, employ a mix of generations, with employees representing Baby Boomers, Generation X, Generation Y and Generation Z (Calk & Patrick, 2017:131; Dimock, 2019:2; Roebuck *et al.*, 2013:54). Each of these generation groups has

different characteristics (Bannon *et al.*, 2011:61; Spiro, 2006:16) that may influence how they are motivated to follow healthy lifestyle habits.

Health is regarded as an essential factor when it comes to the lifestyle choices of each generation. The **Baby Boomers** generation represents the segment of the population born between 1946 and 1964 (Brewer, 2014:343; Carter & Kelly, 2013:409; Fry, 2016:2). This generation is a highly motivated and consumption-orientated consumer group (Brewer, 2014:343). Baby Boomers tend to be more health-conscious than older generation groups; this is evident from research that indicates a high incidence of health club memberships and health supplements and vitamins usage among this generation group. Another study by Gibson *et al.* (2009:4) examining employee profiles found that this generation rated their health as their top personal value. Baby Boomers attach importance to being active, feeling good and staying youthful (Biggs *et al.*, 2007:53).

In contrast, a study in the USA by Hoffman *et al.* (2012:219) indicated that their Baby Boomer subjects were prone to be overweight due to a lack of physical activity and weight management. Work by Leveille *et al.* (2005:1607) also showed significant trends among Baby Boomers of sedentary lifestyle habits characterised by the consumption of foods that were high in both fat and carbohydrates.

Generation X is the group of consumers born between 1965 and 1980 (Dimock, 2019:2; Fry, 2016:2). This generation group favour a work-life balance and see family security as their primary personal value (Roebuck *et al.*, 2013:53; Gibson *et al.*, 2009:5). They tend to rely on online information to make healthy lifestyle decisions (Kolnhofer-Derecskei *et al.*, 2019:35). A previous study conducted on physical activity levels showed that approximately 90% of this generation group partook in at least one recreational leisure activity (e.g. swimming, hiking, or fishing) per month. In comparison, while nearly 40% participated in two or more leisure-time activities every month (Miller, 2011:6).

Generation Y, also known as the Millennial generation, consists of the section of the population born between 1981 and 1996 (Dimock, 2019:2). Similar to generation X, this consumer group values a work-life balance (Yeaton, 2008:68). Millennials tend to value the opinions of others and feel strongly about living up to the social expectations of their peers, friends, and community (Altınbaşak-Farina *et al.*, 2014:13; Ordun, 2015:42). Millennial consumers are civic-minded (Lawton & De Aquino, 2015:21), optimistic, and well-educated, and have enlightened attitudes (Spiro, 2006:16). Millennial consumers can therefore be said to have modern attitudes and interests, leading them to care for their community in modern ways. Health and wellness became a daily pursuit for this generation as they continually use apps to track their training data and search for online information (Spiro, 2006:17) about

healthier food options (Lawton & De Aquino, 2015:24). This generation urges friends and family members to follow healthier lifestyles and consider adopting healthy eating as a lifestyle choice rather than a goal-driven diet (Nermoe, 2018).

Lastly, **Generation Z** is the generation that follows the Millennial generation, thus the generation born between 1997 and the present (Dimock, 2019:2). This generation is characterised by higher levels of education, ethnical and racial diversity, and being achievement-oriented (Schroth, 2019:1). A previous study found that consumers from generation Z, highly value feedback from those who directly manage them (Dolot, 2018:46). Furthermore, technology seems to form an integral part of this generation's everyday lives (Dolot, 2018:46). This generation understands and shows concern about the impact that their sleeping habits have on their overall health (Shridhar, 2020:6). In addition, they place value on maintaining a healthy weight and physically keeping fit and strong (Shridhar, 2020:8).

Considering the above, it is evident that employees coming from **one work environment** have different lifestyle experiences, goals and habits – all of which have a strong influence on the respective generations' motivations to pursue a healthy lifestyle. Likewise, it is also clear from the above generations' characteristics that employees from across all generations desire a work environment where they feel inspired and productive. Employers should be mindful of the variances between the different generations and how to motivate each generation in order to fulfil the common desire (Spiro, 2006:16).

Literature indicates that most Baby Boomers occupy higher-level or senior positions in the workplace because of their age and work ethic. Baby Boomers' loyalty towards their employers, their determination, and their will to outrank others characterise this generation (Bursch & Kelly, 2014:5). These consumers or employees will most likely be motivated by financial incentives or recognition and praise (Gibson *et al.*, 2009:5; Mahmoud *et al.*, 2020:13). Generation X, on the other hand, will be motivated if they find their work meaningful and fun; they also value an honest relationship between employers and employees (Gibson *et al.*, 2009:5). Generation Y will be motivated if they find their work exciting and challenging, and see opportunities for growth (Gong *et al.*, 2020:784). Furthermore, this group wants feedback from employers and outward recognition, and they have a desire to feel valued (Bursch & Kelly, 2014:7; Calk and Patrick, 2017:137; Jonck *et al.*, 2017:2). Generation Y will be inclined to work for a corporate environment that takes care of their needs by providing, for example, a gym on the premises or a crèche where young mothers can leave their children while at work, or a cafeteria with healthy food options. Similar to Generation Y, Generation Z appreciates feedback from their managers/employers (Dolot, 2018:46). Additionally,

Generation Z is highly educated (Schroth, 2019:1) and use technology to their advantage (Dolot, 2018:46).

2.2.3. Income and level of education

Consumers' income and level of education are two factors that are closely related (Mpinganjira, 2013:279). Consumers with a higher education most likely fall in higher income brackets. A higher income bracket, in turn, is associated with specialised occupations that tend to require consumers with higher levels of education (Jamir & Ezung, 2017:54; Jansen van Rensburg, 2014:54). Conversely, low incomes are typically associated with lower education levels (Benzeval & Judge, 2001:1371; Pinkstaff *et al.*, 2017:442). Divine and Lepisto (2005:279) indicated a positive correlation between higher education levels and the adoption of healthy lifestyles. Consumers with higher levels of education are also expected to engage in regular physical activity and healthier dietary patterns (Divine & Lepisto, 2005:277; Johansson *et al.*, 1999:216; Lungelo *et al.*, 2018:516).

Furthermore, higher levels of education increase the literacy of consumers and their ability to make informed decisions, evidently increasing the success rate of consumers in better managing their health (Lynch *et al.*, 2000:1200; Parker *et al.*, 2003:147; Yen & Moss, 1999:350). Research also shows that the higher their level of education, the more likely consumers are to have access to and utilise health-related material, ultimately helping them maintain a healthier lifestyle (Arkes, 2003:1; Dursun *et al.*, 2018:94). Pincus and Callahan (1994:355) state that education has a direct impact on psychological factors such as autonomy and self-control. The positive correlation between education and these psychological factors (Mirowsky & Ross, 2003:188) allows consumers to combine healthy behaviours into a healthy lifestyle (Mirowsky & Ross, 1998:415).

It is evident from research that income influences consumer health (Khullar & Chokshi, 2018:1; Marmot, 2002:31). A population with lower education and income levels is more at risk for poor health. This includes cardiovascular diseases, which lead to decreased life expectancy (Pinkstaff *et al.*, 2017:442). Consumers with limited resources are more likely to sustain their diets with foods that are energy-dense and high in refined grains, added fats, and sugars (Department of Health, 2016:16; Khullar & Chokshi, 2018:3). Therefore, consumers with a lower education level are more inclined to be obese and make unhealthy food choices (Kassa & Grace, 2019:7). In lower-income countries such as South Africa, a higher rate of obesity occurs amongst consumers (Department of Health, 2016:13; Kempen *et al.*, 2012:15). These consumers are more susceptible to risk factors for obesity, including high-calorific diets and decreased physical activity (De Cosmi *et al.*, 2017:2; Ford *et al.*, 2017:148). Thus, it is evident

that low-income consumers will struggle to maintain healthy lifestyle habits due to the time-consuming and expensive nature of healthy lifestyle habits, such as participating in physical activity (Venn & Strazdins, 2017:102). However, more educated consumers with a higher income often have longer working hours and are challenged with family responsibilities, which may lead them to opt for unhealthy food choices (Ahmad, 2020:700; Escoto *et al.*, 2012:793).

Research provides a clear understanding of how consumers' demographic characteristics will influence their behaviour. These characteristics concerning geography, age, income, and education level provide a baseline for understanding the origin of the motivation for consumers to engage in healthy lifestyle habits.

2.3. HEALTHY LIFESTYLE HABITS OF CONSUMERS

Habitual behaviour forms an integral part of consumers' decision-making, lifestyle habits and motivation. Research distinguishes between habitual and goal-directed behaviour (Nafcha *et al.*, 2016:49): habitual behaviour is a form of automatic or spontaneous behaviour that individuals repeat because they find the behaviour rewarding and effortless (McCarthy, 2014:55; Wood & Neal, 2009:579); while goal-directed behaviour represents intentional and flexible actions and typically only lasts until after the goal has been achieved (Nafcha *et al.*, 2016:49).

Short and Mollborn (2015:78) point out that human health is shaped through everyday behaviours. To achieve meaningful health outcomes, consumers must engage in healthy lifestyle activities over a prolonged period, which will ultimately become a habit that will improve their quality of life and overall health (Young, 2014:89). A South African study among university students showed that their diets tend to contain an excess of saturated fats, salts, and sugars and a lack of essential food groups such as fruits, vegetables, and fibre (Rootman & Galloway, 2013:177). Another study reported that two-thirds of the South African adult population did not meet the international requirements for health-promoting physical activity per day (Swart *et al.*, 2008:135).

Staying in the South African context, 43% to 49% of the adult and adolescent population do not engage in sufficient physical activity to receive the associated health benefits from regular exercise (Micklesfield *et al.*, 2014:40; SASMA, 2019). Furthermore, 70.6% of the same population group reported that they consumed five or fewer servings of fruits and vegetables daily (Porter *et al.*, 2009:222). It is clear from these surveys that a large number of South African adults follow unhealthy lifestyles, primarily due to poor dietary behaviour and a lack of enhancing physical activity (SASMA, 2019). Unhealthy lifestyles have been a root cause of

the increased occurrence of NCDs (Rootman & Galloway, 2013:177). It follows that for consumers, nationally and globally, to prevent NCDs caused by various risk factors and to improve their overall well-being, they should be proactive and convert to sustainable healthy lifestyle habits.

In an urban corporate context, consumers' healthy lifestyle habits are negatively influenced by various factors such as irregular working hours, skipping of meals, long commutes, and dining with colleagues (Kawada & Suzuki, 2008:397:403). The work environment has an undeniable effect on employees' health (Pinkstaff *et al.*, 2017:445). The urban work environment is frequently characterised by employees sitting behind desks and continually working on computers, which predisposes them to more sedentary behaviours (WHO, 2017a:13). Some employers implement wellness programmes in their organisations in an effort to improve and address employees' health and lifestyle habits (Pinkstaff *et al.*, 2017:443), increase productivity levels and reduce health care costs (Kolbe-Alexander *et al.*, 2012:2). In addition, various strategies are implemented in the work environment to encourage employees to make healthier lifestyle choices. Examples of such strategies include providing employees with healthier food options in the cafeteria, offering on-site exercise facilities, promoting breaks throughout the day, establishing walking paths on the premises, and motivating consumers to use the stairs instead of the elevator (Pinkstaff *et al.*, 2017:443; WHO, 2017a:18). These attempts to promote healthy lifestyle habits among employees can reduce the risk of their developing NCDs (Department of Health, 2016:7; Grové & Wilders, 2009:46).

The WHO (2017a:7) identified six behaviours that organisations need to promote to encourage healthy lifestyle habits among employees at the workplace, namely 1) consider what you eat; 2) pay attention to your weight; 3) increase your activity levels; 4) control your stress levels; 5) keep track of your progress in adopting healthy lifestyle habits; and 6) reduce the use of tobacco and alcohol. Employers can play a critical role in keeping employees motivated to engage in healthy lifestyle habits. They should promote these six behaviours to transform the workplace into a more sustainable, healthier environment (WHO, 2017a:32).

The following aspects will be focused on to address consumers' healthy lifestyle habits in this study, namely: 1) food consumption behaviour, 2) physical activity, 3) leisure time, 4) sleeping, and 5) stress.

2.3.1. Food consumption behaviour that influences healthy lifestyle habits

In order to understand consumption behaviour, it is essential to start by gaining an understanding of consumer behaviour. **Consumer behaviour** refers to the behaviour that individuals show or adopt when faced with several decisions while purchasing, evaluating,

using, or disposing of products (Shrosbree, 2014:4). Furthermore, consumer behaviour intends to satisfy an individual's needs and often correlates with how households or families use their available resources, such as effort, money, and time (Shrosbree, 2014:4). **Consumption behaviour**, on the other hand, refers to consumers' intentions or attitudes when buying or consuming products (Duchin, 2001:2678). From the above definitions, **food consumption behaviour** can be described as the type of food products that consumers buy based on their reasons or motivations for buying these specific food products. Aspects that drive food consumption behaviour include social acceptance (Barauskaite *et al.*, 2018:60), personal preferences, habits, availability and economy, nutritional and health benefits and the knowledge thereof, values, emotions, and body weight and image (Whitney & Rolfes, 2013:4). In addition, Brug (2008:150) mentions three other key elements that affect healthy or unhealthy food choice behaviour: knowledge (ability), environmental opportunity, and consumer motivation.

Consumers' increased concern with their health and well-being is likely to be a driving factor for a greater demand for products that promote health (Puhakka *et al.*, 2017:111). Bucher *et al.* (2013:74) define healthy food consumption behaviour as balanced proportions from a variety of food groups. Consumers are faced with several choices when it comes to what they want to eat and when they want to eat it. When a variety of nutritional foods are consumed, it can support good health. Additionally, consumers with adequate knowledge about nutritional benefits are inclined to make healthier and more sensible food choices (Bucher *et al.*, 2013:74; Whitney & Rolfes, 2013:4).

Health can serve as a motivational factor that influences consumers' food choices (Brug, 2008:152). However, many consumers compromise on the long-term motivation to adopt healthy habits in order to satisfy short-term aspirations such as pleasure and taste (Verbeke, 2006:126). Food consumption behaviour is influenced by external and internal factors, all of which can have a positive or negative effect on the healthy lifestyle of the consumer. A discussion of these factors follows below.

External factors:

- **Social setting:** A crucial factor to consider is the existing relationship between consumers' social setting and their food consumption behaviour (Higgs & Thomas, 2016:1; Whitney & Rolfes, 2013:4). Consumers often share meals with their family, friends, or even work colleagues (Oh *et al.*, 2014:2726). The behaviours and opinions of other consumers regarding appropriate actions may strongly influence consumers' decisions and actions (Mollen *et al.*, 2013:83). If healthy eating became a trend, consumers concerned with their

image increasingly started purchasing functional foods to portray the desired image of a healthy lifestyle (Barauskaite *et al.*, 2018:64) in an effort to impress their friends.

- **Convenience and economy** are significant aspects that influence consumers' food choices (Brunner *et al.*, 2010:498; WBCSD, 2018:16; Whitney & Rolfes, 2013:4). Most consumers have become more urbanised, are working longer hours and are faced with a fast-paced lifestyle; hence, the fast and easy option is to purchase a convenient meal that is already prepared and readily available (Ahmad, 2020:700; Daniels & Glorieux, 2015:60; Ricci *et al.*, 2018:54). Stress, social norms and limited food skills are also contributing factors that influence the demand for convenient meals (Alm & Olsen, 2017:105); however, as the demand for healthy food increases (WBCSD, 2018:26), more healthy convenience meal options are becoming available (Brunner *et al.*, 2010:498). According to Shisana *et al.* (2013:188), **food pricing** is a key contributing factor that influence food choices. As a result of increasing food prices, consumers' shopping habits and priorities have progressed to more economic food choices (Whitney & Rolfes, 2013:4). Consumers might therefore be inclined to steer clear from expensive convenience food options, and rather opt for a home cooked meal (Whitney & Rolfes, 2013:4).
- **Functional foods** have become a noticeable trend within consumers' food choices (Ali & Rahut, 2019:1; Litwin *et al.*, 2019). Functional foods refer to food products that can reduce the risk of disease by providing health benefits (Barauskaite *et al.*, 2018:59; Jauho & Niva, 2013:52; Roberfroid, 2000:1682S). These foods offer one or more of the following characteristics: it is a high source of protein, provides dietary fibre, contains polyunsaturated fats, and/or can raise high-density lipoprotein (HDL) cholesterol, lower cholesterol levels or improve glucose responses (Barauskaite *et al.*, 2018:59; Whitney & Rolfes, 2013:430).
- **Environmental opportunity** refers to the availability of food options that satisfy consumers' desires for different reasons, such as salty, fatty, or sweet, all of which characterise energy-rich foods (Brug, 2008:152; Bucher *et al.*, 2013:74). Food plays a vital role in consumers' lives (Steenkamp, 1993:401). Therefore, consumers must be made aware of the impact that food choices and consumption behaviour have on their healthy lifestyle habits in order for them to make informed decisions that will improve their health.

Internal factors:

- **Personal preference** relating to, for instance, taste and flavour are commonly seen as the number one influence when it comes to making food choices (Baudry *et al.*, 2017:11; Bucher *et al.*, 2013:74; Kourouniotis *et al.*, 2016:1; Whitney & Rolfes, 2013:5). There are two distinct flavours that consumers commonly prefer, namely salt or sweet, respectively.

Some consumers also base their food choices on fatty or spicy flavours (Whitney & Rolfes, 2013:5). Personal preference influences consumer decisions in the sense that consumers tend to base their decisions on satisfaction more than on healthy food choices.

- **Habit:** Consumers make food choices based on habit, daily (Chan *et al.*, 2016:6). The reason is that consumers find it comforting in that it does not involve extensive decision-making (Adamowicz & Swait, 2013:19; Stoewen, 2017:861; Whitney & Rolfes, 2013:4). Habitual behaviour plays a vital role in consumers' drive to achieve a set outcome; for example, consumers will lower their calorific intake out of habit for the sole reason of losing weight (Aarts & Dijksterhuis, 2000:53; Chan *et al.*, 2016:6). The habitual food consumption of consumers is strengthened further when such habitual behaviour leads to satisfactory experiences (Aarts *et al.*, 1997:12; Wood & Neal, 2007:847). If consumers maintain healthy food-related habits, it will positively affect their overall well-being (Stoewen, 2017:861); conversely, though, poor food-related habits can lead to various NCDs (WHO, 2020). It is therefore essential that consumers are aware of the impact that food-related habits have on the overall healthiness of their lifestyles.

2.3.2. Physical activity as part of healthy lifestyle habits

Consumers' lifestyle habits are positively affected by physical activity, as it encourages healthy food choices, promotes sleep, and often reduces stress levels and smoking patterns (Grové & Wilders, 2009:39). Physical activity involves muscle contraction due to bodily movements, which enhances energy expenditure (Daskalopoulou *et al.*, 2017:6; McKinney *et al.*, 2016:133; Whitney & Rolfes, 2013:438). Regular physical activity is directly associated with various health benefits (Daskalopoulou *et al.*, 2017:7; Lungelo *et al.*, 2018:516; Peltzer & Phaswana-Mafuya, 2012:447; McKinney *et al.*, 2016:131; Warburton & Bredin, 2016:459); therefore, consumers need to make physical activity a part of their daily lives. These health benefits include a reduced risk of various NCDs such as cardiovascular diseases, high blood pressure, and obesity (Erikssen, 2001:571; Warburton & Bredin, 2016:459). However, a decline in physical activity can lead to various NCDs such as excess body fat, obesity, diabetes, cardiovascular diseases, hypertension and cancer (Ford *et al.*, 2017:152; Malambo *et al.*, 2016:2; McKinney *et al.*, 2016:136).

Physical inactivity was reported in 2012 as the fourth most prominent cause of death globally (Kohl *et al.*, 2012:294), and worldwide, 23% of adults do not engage in enough physical activity (WHO, 2019). Although the latest available findings showed that in South Africa more than 60% of older adults were physically active (Peltzer & Phaswana-Mafuya, 2012:457), only 24% of females and 36% of males were engaging in enough physical activity (Adams *et al.*, 2007:106). Some consumers in the South African workforce have been shown to become

physically inactive due to high stress levels associated with their working environments (Labuschagne *et al.*, 2011:81). Furthermore, the WHO stated in 2019 that consumers' inactivity levels had increased due to aspects such as technology, transportation, and urbanisation, all of which influence consumers' daily activity patterns. Urbanisation and the accompanying socio-economic changes account for a substantial part of the upsurge in physical inactivity and obesity of adults in South Africa (Mlangeni *et al.*, 2018:517).

Workplaces sometimes provide employees with opportunities that encourage healthy lifestyle behaviours, including their engagement in physical activity and overall behaviour changes (Freak-Poli *et al.*, 2020:1). Physical activity at the workplace can be of great value, as it contributes to the overall well-being of the consumer, including fewer work absences and higher productivity levels (Sjøgaard *et al.*, 2016:164). The WHO (2018:16) states that physical activity by working consumers aged 18–64 years entails household chores, leisure time activities, travel by different means of transportation, planned exercise, and playing games. A minimum of 150 minutes of moderate exercise per week is necessary to improve the health of adult consumers (Emm-Collison *et al.*, 2020:1; Malambo *et al.*, 2016:2; McKinney *et al.*, 2016:131).

Nevertheless, consumers (employees), especially top- and middle-level executive employees, cannot find enough time to engage in physical activity due to their workload (Thendo *et al.*, 2013:999; Mazzola *et al.*, 2017:483). Transportation systems in urban regions mostly require consumers to make use of vehicles rather than walking or cycling (WHO, 2019). As previously indicated, technology is also a significant concern that contributes to individuals' inactivity levels (Grové & Wilders, 2009:39; Labuschagne *et al.*, 2011:91). As mentioned earlier, employees are expected to do their work on computers, which requires them to remain in a seated position for extended periods of time, thereby contributing to their being passive (Straughan, 2005:276). Further reasons for physical inactivity include the threat of physical harm (particularly in a South African context), insufficient recreation facilities such as parks, and pollution (WHO, 2019).

In essence, a healthy lifestyle is strengthened by the amount of physical activity that forms part of the consumer's habitual healthy behaviour. However, physical activity requires an investment in time and energy, although a positive input does deliver a positive reward. A recent study showed that individuals with more extensive social networks tended to be more physically active in terms of exercise than those with a smaller social network (Josey & Moore, 2018:62). The habit of engaging in physical activity touches on the factor of leisure time, since consumers pursue different activities in their free time, evidently influencing their healthy lifestyles both positively and negatively.

2.3.3. Leisure time activities that influence healthy lifestyle habits

The term “leisure” in the context of individuals’ activities refers to those activities that they pursue in their free time and does not include any form of work (Ateca-Amestoy *et al.*, 2008:65). Leisure time physical activity is of the utmost importance to consumers as it has the potential to improve their physical, mental, social, and overall well-being (Ganesh *et al.*, 2018:227; Wiese *et al.*, 2018:57). Moreover, including physical activity as part of leisure time activities can reduce potential health risks (O’Donovan *et al.*, 2017:335), increase consumers’ productivity in the workplace (Musich *et al.*, 2003:393), and improve consumers’ self-esteem and workplace satisfaction (Coulson *et al.*, 2008:176). However, the most favoured leisure time activities among working adults in particular consist of passive activities such as watching television (Larsson & Wolk, 2019:562; McCarthy, 2014:58), which in turn may affect their well-being (Wiese *et al.*, 2018:57). Furthermore, passive leisure time activities may contribute to unhealthy food choices and an increase in energy intake due to distraction (Hare-Bruun *et al.*, 2011:5; Rey-López *et al.*, 2013:1563). Individuals might not engage in physical activity during their leisure time due to various influencing factors such as low motivation levels, a lack of available time, insufficient funds, or transportation concerns (Chinn *et al.*, 1999:191).

2.3.4. Sleeping as part of healthy lifestyle habits

Inadequate sleep is reported to be a common issue worldwide (Schwarz *et al.*, 2018:155), and a pronounced change in consumers’ sleeping habits has been recognised (Larcher *et al.*, 2015:263). In a study by Stranges *et al.* (2007:1176), nearly a third of the South African female respondents (31.3%) reported having severe problems with falling asleep, and 18.2% reported that they do not feel refreshed and rested. Men, on the other hand, had slightly fewer problems falling asleep (27.2%) and feeling refreshed (16.1%). These results indicate that some South African consumers may have severe sleeping problems (Stranges *et al.*, 2007:1176) and, in the context of the present study, may put them at risk for NCDs. Irregular sleeping patterns can be ascribed to lifestyle habits, environmental factors, and disease (Magnavita & Garbarino, 2017:1). Sufficient sleep is essential for consumers in that it improves their overall well-being, rational thinking, daytime productivity, problem-solving skills, creativity, and ability to focus (Magnavita & Garbarino, 2017:7; Richer, 2018:17). Researchers have established a relationship between poor sleeping patterns and impaired health (Van Laethem *et al.*, 2015:391). Studies done on associations between sleep duration and obesity have indicated that sleeping fewer than nine hours per night has a positive correlation with NCDs such as obesity (Ford *et al.*, 2017:154; Lin *et al.*, 2018:387) and type 2 diabetes (Larcher *et al.*, 2015:269).

Furthermore, insufficient sleep can have adverse consequences such as increased healthcare costs, lower productivity, distress, work-related accidents, and poorer overall health (Gaultney & Collins-McNeil, 2009:132). Some recommendations that consumers can pursue in order to improve their sleeping patterns are: regulating bed- and rise times, avoiding nicotine or caffeine intake closer to bedtimes, avoiding the use of electronic devices in bed, creating a dark room with no light streaming in from the outside, ensuring a comfortable bedroom temperature, and closing the necessary windows and doors to block out any outside noises (Bjorvatn *et al.*, 2018:188; Irish *et al.*, 2015:23).

Chronic work-related stress is regarded as a pivotal contributor to sleep deprivation (Larcher *et al.*, 2015:269). Simultaneously, sleep is essential to counteract the negative impact that stress has on an individual (Van Leathem *et al.*, 2013:535). It is, therefore, necessary to understand the sleeping habits of consumers in an urban corporate environment and how these habits can be improved to contribute to a healthy lifestyle.

2.3.5. Stress and healthy lifestyle habits

Stress is the body's reaction to any changes in the external environment that require a response (Srivastava, 2018:5). At work, stress is an unavoidable concern (Sharma & Kundu, 2019:868) and part of every individual's day-to-day life (Garg & Yajurvedi, 2017:1). Stress can be either positive or negative (Sharma & Kundu, 2019:868). **Positive stress** provides the means to keep an individual motivated, productive, happy, and energetic (Garg & Yajurvedi, 2017:1), and results from an individual's abilities being higher than what is demanded of them. However, when stress exceeds an individual's ability to cope, it can influence their physical and psychological health (Garg & Yajurvedi, 2017:1; Marcatto *et al.*, 2016:274); such stress is referred to as **negative stress**. Insomnia, depression, and an inability to concentrate are all examples of psychological patterns that can be caused by stress. Physiological consequences involve back and heart problems, a weakened immune system, asthma, and the like (Moretti & Postruznik, 2012:2).

The relationship between stress and motivation influences the work performance of employees (Glazer & Liu, 2017:4). All too often, an individual's work environment is the originator of both demand and pressure, which leads to stress (Sharma & Kundu, 2019:868). Workplace stress – also referred to as occupational or job stress – is a broad term that involves work-related stimuli that could potentially have various behavioural, physical, or psychological consequences. These consequences may influence both the employee's and the organisation's health, and, thus, positive productivity (Glazer & Liu, 2017:1). Stress in the workplace continues to be a prevalent and costly problem (Glazer & Liu, 2017:1; Srivastava,

2018:5) that influences consumers' health (Ahmad, 2020:700) and, ultimately, their work productivity (Srivastava, 2018:5; Van Mol *et al.*, 2018:234). Stress and health problems correlate directly with each other. Job stress in this situation may lead to health problems such as NCDs, which influence employees' sleeping patterns, thereby increasing the chances of a decrease in their motivation and productivity while increasing the chances of workplace injuries (Srivastava, 2018:8).

Workplace stress is associated with intrinsic and extrinsic factors that affect an individual's quality of work (Sharma & Kundu, 2019:868). Intrinsic factors include long working hours, fewer break periods, ergonomics, heavy work, complex tasks, repetitive routines, and tight deadlines (Sharma & Kundu, 2019:868). Extrinsic factors include job insecurity, incompetence, relationships with co-workers, role uncertainty, changes within the organisation, and difficulty in assigning duties (Schaufeli & Salanova, 2014:296; Sharma & Kundu, 2019:868).

Restructuring, expansion, and competing demands are unavoidable facets of businesses worldwide (Batista & Reio, 2019:38; Garg & Yajurvedi, 2017:2). The banking sector, which is related to the setting of the urban corporate environment in the present study, faces major impeding factors that affect employees' work efficiency and increase their stress levels (Garg & Yajurvedi, 2017:1; Giorgi *et al.*, 2017:1). Various stress-inducing factors characterise the work performed by employees in the banking sector. These factors include challenges around job insecurity, role conflict, workload, inadequate salary, job changes, status, time for family, long working hours, communication, and technical problems at work (Garg & Yajurvedi, 2017:2; Srivastava, 2018:5). As employees' job pressure and responsibilities increase, it may have a negative influence on their attitudes and behaviours. Excessive stress levels destroy individuals' positive productivity, which ultimately influences the organisation negatively (Garg & Yajurvedi, 2017:2). In the changing banking environment, stress has been spiralling as the banking sector has become demonetised (Srivastava, 2018:8).

The consequences of work-related stress originate at different levels, namely: individual, organisation, and social or group level (Moretti & Postruznik, 2012:2).

Stress at the individual level: Individual consequences of work-related stress reflect directly in an individual's job responsibilities and personality (Garg & Yajurvedi, 2017:2; Srivastava, 2018:7). Researchers commonly group individuals' personalities into two types. The first personality type is prone to stress and uses behavioural patterns (including smoking, alcohol consumption, eating disorders, violence, or harassment) to cope with stress. The second personality type is less likely to experience stress and is more relaxed, tending not to feel pressured by deadlines (Srivastava, 2018:7).

Work-related stress at the organisational level: Aspects in the work environment such as loud noise, poor infrastructure, foul odours, and poor lighting all contribute to an individual's stress and productivity levels (Srivastava, 2018:7). Furthermore, where leadership in the organisation demand an unrealistic level of work performance from employees, it adds to stress at the organisational level (Garg & Yajurvedi, 2017:2). Organisational stress harms workplace co-operation in ways that include employee turnover, aggressive communication, and isolation (Moretti & Postruznik, 2012:2).

Stress at group/social level: Poor group dynamics are directly related to workplace stress (Srivastava, 2018:7). A lack of support, inadequate direction, and inconsistent behaviours all cause reduced group dynamics (Moretti & Postruznik, 2012:2).

Although various studies regarding stress exist, consumers might be unaware of the possible health effects that stress may have on their productivity and motivation and, consequently, their lifestyle habits (Quick & Henderson, 2016:3; Varvogli & Darviri, 2011:74). When consumers engage in strategies aimed at effectively managing their stress, they might see a positive transition in their overall well-being (Quick & Henderson, 2016:5).

2.4. THE MOTIVATIONS OF CONSUMERS TO PURSUE HEALTHY LIFESTYLE HABITS

Motivation involves factors that influence human behaviour (Botha, 2019:35). Shrosbree (2014:74) defines motivation as the driving force within individuals that leads them to action. Thus, motivation either pushes an individual towards a particular behaviour or pulls them away from that behaviour. Specific occasions or situations can influence the motivations of consumers (Botha, 2019:40).

Consumers are motivated through internal and external types of motivation (Botha, 2019:28), with **internal motivation** being considered an inner desire to accomplish specific goals (Baby, 2019:2). Internal motivation develops from within an individual and is a goal-orientated behaviour with the expectation that the behaviour will result in satisfaction (Baby, 2019:2). Aspects such as personality, consumer needs, personal attitudes, perception, and communication with others in the same social class (Ndwandwe, 2008:2; Seifert *et al.*, 2012:2). It can therefore be said that internal motivation is not affected by any external aspects and is a motivation from within an individual (Botha, 2019:39). A consumer within the context of this study would be internally motivated to follow healthy lifestyle habits if it were a personal goal of theirs to maintain a healthy lifestyle. Internal motivation drives such consumers to make changes to their attitudes, perceptions, and needs in order for them to succeed in maintaining a healthy lifestyle.

Extrinsic motivation refers to the type of motivation where the reward exists externally (Botha, 2019:39). This type of motivation can be a useful tool for organisations to motivate their employees to accomplish goals. Organisations commonly make use of external influencers in the form of incentives to motivate consumers. Ungerer (2014:406) points out that external motivations are affected by consumers' reference groups, social class, age, culture, and subculture. A problem associated with extrinsic motivation is that this type of motivation is typically of short duration. If continually being offered extrinsic motivation, consumers/employees will be oriented more towards short-term goals and less towards achieving the long-term benefits that internal motivation offers. As a result, consumers can become disinterested in their work and might experience burnout (Ganta, 2014:226).

Employee motivation leads to increased productivity levels and dedication in the work environment (Ukandu & Uhpere, 2011:11521). Many organisations use health promotion programmes to promote their employees' health (Cancelliere *et al.*, 2011:9); however, these organisations have found that any changes in employees' health behaviour do not have a lasting effect (Horwitz, 2013:472; Seifert *et al.*, 2012:2). The main obstacle that organisations face in health promotion programmes is employees' lack of interest in participating in these programmes. Therefore, organisations often make use of incentives to motivate employees (externally) to engage in programmes that encourage them to adopt healthy lifestyle habits (Ballentine *et al.*, 2003:2; Seifert *et al.*, 2012:3), in the hope that employees will recognise the real rewards from a healthy lifestyle in the form of reduced stress, feeling better and living longer. In this study, consumers who followed healthy lifestyle habits due to external motivation and not because of the long-term benefits of a healthy lifestyle might find it difficult to maintain a healthy lifestyle in the future.

2.4.1 Situational motivation scale

Individuals experience situational motivation when engaging in an activity or situation impacted by external factors (Guay *et al.*, 2000:176). Situational motivation in the context of this study describes the reason (or rationale) for consumers to choose their current lifestyle habits. The situational motivation scale (SIMS) represents a brief and versatile self-reporting measure of intrinsic situational motivation, identified regulation, external regulation, and amotivation (Guay *et al.*, 2000:175-213). Each of these concepts will be discussed and applied to the context of the present research study.

2.4.1.1. Intrinsic motivation

Intrinsic motivation is an internal and personal form of motivation. Consumers engage in this behaviour to experience personal joy and satisfaction (Ryan & Deci, 2000:56; Guay *et al.*,

2000:178; Kowal & Fortier, 2000:172). This type of motivation entails curiosity, belonging, learning, challenge, adventure, personal interest, duty, and desire (Chen *et al.*, 2013:918). Therefore, in this study, intrinsically motivated consumers may be said to enjoy maintaining healthy lifestyle habits if a healthy lifestyle forms a part of what they want to achieve in life. Moreover, these consumers will exert themselves to gain more knowledge about a healthy lifestyle to achieve the best results. Intrinsically motivated consumers' internal drive furthermore consists of: 1) knowledge (consumers want to learn more about their goal), 2) accomplishment (consumers want to experience a sense of achievement), and 3) stimulation (consumers wish to experience a sensation that accompanies the specific goal). Figure 2.1 includes the following SIMS-derived questions associated with intrinsic motivation: “1. *Because I think that this activity is interesting*; 5. *Because I think that this activity is pleasing*; 9. *Because this activity is fun*; 13. *Because I feel good when doing this activity*”.

2.4.1.2. Identified regulations

A consumer is motivated by identified regulation when they see or personally identify the value/importance of a behaviour (Ryan & Deci, 2020:3). Consumers accept these behaviours as a regulation of their own that ultimately benefits them by helping them achieve a goal (Guay *et al.*, 2000:177). This form of motivation is intrinsic or self-determined and, therefore, the consumer will voluntarily accept the merits of a related behaviour because it is regarded as being personally important (Guay *et al.*, 2000:177; Howard *et al.*, 2016:75). Identified regulation does not demand an immediate reward, as the consumer values the ultimate result, namely how it affects their personal well-being and desires (Selart *et al.*, 2008:441). In this study, identified regulation occurs when a consumer believes and understands that healthy lifestyle habits will improve their overall well-being. This leads consumers to change their lifestyle habits to incorporate exercise and healthy food choices into their daily lives to gain the expected benefits. Although the behaviour that goes along with achieving this goal is extrinsic, it is instrumental to other aims. Consumers choose healthy lifestyle habits because these habits are perceived to be useful and valuable to them. In Figure 2.1., questions that correlate with identified regulation according to the SIMS include: “2. *Because I am doing it for my own good*; 6. *Because I think that this activity is good for me*; 10. *By personal decision*; 14. *Because I believe that this activity is important for me*”.

The Situational Motivation Scale (SIMS)

Directions: Read each item carefully. Using the scale below, please circle the number that best describes the reason why you are currently engaged in this activity. Answer each item according to the following scale: 1: *corresponds not at all*; 2: *corresponds a very little*; 3: *corresponds a little*; 4: *corresponds moderately*; 5: *corresponds enough*; 6: *corresponds a lot*; 7: *corresponds exactly*.

Why are you currently engaged in this activity?

1. Because I think that this activity is interesting	1	2	3	4	5	6	7
2. Because I am doing it for my own good	1	2	3	4	5	6	7
3. Because I am supposed to do it	1	2	3	4	5	6	7
4. There may be good reasons to do this activity, but personally I don't see any	1	2	3	4	5	6	7
5. Because I think that this activity is pleasant	1	2	3	4	5	6	7
6. Because I think that this activity is good for me	1	2	3	4	5	6	7
7. Because it is something that I have to do	1	2	3	4	5	6	7
8. I do this activity but I am not sure if it is worth it	1	2	3	4	5	6	7
9. Because this activity is fun	1	2	3	4	5	6	7
10. By personal decision	1	2	3	4	5	6	7
11. Because I don't have any choice	1	2	3	4	5	6	7
12. I don't know; I don't see what this activity brings me	1	2	3	4	5	6	7
13. Because I feel good when doing this activity	1	2	3	4	5	6	7
14. Because I believe that this activity is important for me	1	2	3	4	5	6	7
15. Because I feel that I have to do it	1	2	3	4	5	6	7
16. I do this activity, but I am not sure it is a good thing to pursue it	1	2	3	4	5	6	7

Figure 2.1: The Situational Motivation Scale (SIMS) (Guay et al., 2000:210)

2.4.1.3. External regulations

External regulations are rooted outside an individual and are regulated by rewards (Ryan & Deci, 2020:2) or by the desire to avoid negative outcomes (Ryan & Deci, 2000:60). Fear of failure, competition, deadlines, and social acceptance stimulate this type of motivation (Hon-Keung et al., 2012:298). Consumers feel obligated to engage in healthy lifestyle habits when they are motivated through external regulations (Guay et al., 2000:177). However, it is not feasible for consumers to attempt to maintain healthy lifestyle habits based on this behaviour, as they are not internally motivated to do so. In Figure 2.1, questions that speak to external regulation according to the SIMS include: “3. *Because I am supposed to do it*; 7. *Because it is something that I have to do*; 11. *Because I don't have any choice*; 15. *Because I feel that I have to do it*”.

2.4.1.4. Amotivation

Amotivational behaviour causes consumers to feel incompetent, with no form of expectation, due to deficient levels of motivation towards any given task (Guay *et al.*, 2000:177). Consumers who are amotivated will not display either intrinsically or extrinsically motivated behaviour. Furthermore, amotivated consumers may experience a lack of control over certain areas or situations in their lives and an absence of desire to invest time and energy to exert effort (Barkoukis *et al.*, 2008:40; Howard *et al.*, 2016:75; Ryan & Deci, 2020:2). In this study, a consumer who is amotivated will not know why they participate in healthy lifestyle behaviours. They will not be committed to continuing any healthy behaviours, as they lack competence; therefore, these consumers will not gain any sustained benefits from their lifestyle behaviours. In Figure 2.1, questions that address amotivation according to the SIMS include: “4. *There may be good reasons to do this activity, but personally I don’t see it*; 8. *I do this activity but I am not sure if it is worth it*; 12. *I don’t know; I don’t see what this activity brings me*; 16. *I do this activity but I am not sure if it is a good thing to pursue it*”.

2.4.2. The self-determination theory

The self-determination theory (SDT), forms the theoretical framework for this study as it contributed to the development of the SIMS by Guay *et al.* (2000:175-213). According to this theory, three types of motivation form human behaviour (Guay *et al.*, 2000:176; Howard *et al.*, 2016:74), namely autonomy, competence, and relatedness, all of which support intrinsic motivation (Coccia, 2019:4) and are necessary to achieve consumer well-being (Ryan, 2009:848). Additionally, the SDT aims to depict the extent to which human behaviours are controlled, as opposed to self-directed behaviour. Thus, the SDT describes how consumers’ motivation can be influenced by the extent to which their desires towards autonomy, competence and relatedness are fulfilled (Patrick & Williams, 2012:1).

Autonomy in the SDT conveys the idea that individuals desire to be in control of the actions that they take (Coccia, 2019:4; Patrick & Williams, 2012:3; Ryan & Deci, 2020:1). Intrinsic motivation through autonomy is enhanced when an individual is given a sense of choice or control over a situation (Riley, 2018:56); thus, autonomy is self-regulated (Ryan *et al.*, 2009:115). Furthermore, autonomy demonstrates that consumers will act with enthusiasm concerning healthy lifestyle habits if they align with their personal interests and values. The reason for the enthusiasm and motivated behaviour is consumers’ control over the situation (Moran *et al.*, 2012:355). Autonomy in the workplace is associated with an increase in employees’ motivation levels, which will positively affect their job satisfaction, productivity levels and overall well-being.

Competence entails the desire to achieve, gain knowledge and develop skills that are associated with goals that are important to an individual (Patric & Williams, 2012:3; Ryan & Deci, 2020:1). Competence originates from success and creates a positive feeling that leads to intrinsic motivation (Riley, 2018:57). Within the SDT, a consumer's competence is strongly affected by other individuals' feedback on specific behaviours; for example, when consumers receive meaningful and constructive criticism on their behaviour, it will enhance their sense of competence and aid in motivating them to repeat the behaviour (Ryan & Deci, 2020:1; Ryan *et al.*, 2009:114). Conversely, when confronted with negative or critical feedback about their behaviour, consumers will form a negative connotation with the behaviour that will decrease their sense of competence and leave them unmotivated to pursue that behaviour (Ryan *et al.*, 2009:114). In this study, a sense of competence is experienced by consumers if they regard a healthy lifestyle as being important to them. These consumers use various sources to gain knowledge or a better understanding of what a healthy lifestyle entails to pursue it further. Moreover, if consumers receive positive feedback or comments on their way of living, they are motivated to continue their lifestyle habits.

Relatedness refers to the individual's need to feel connected to and be understood by others, as it creates a sense of security and contributes to the individual's well-being (Patric & Williams, 2012:3; Riley, 2016:58; Ryan & Deci, 2020:1). Individuals are motivated when they feel appreciated and are involved in decisions made by others (Ryan *et al.*, 2009:115). In the context of this study, relatedness also contributes towards consumers' drive concerning healthy lifestyle habits. Therefore, relatedness can be achieved by allowing consumers to contribute and positively including them in the workplace. In contrast to autonomy, relatedness is externally regulated by the consumers' connection with others within their environment. Although not implemented in this particular study, six related theories within the self-determination theory (SDT) are described to provide more information regarding the main theory:

1) The **Cognitive Evaluation Theory** (CET) is based on intrinsic motivation, as it considers needs such as autonomy, competence, and relatedness (Riley, 2016:1). The CET includes an important grounding assumption concerning consumer motivation. This assumption states that consumers' intrinsic motivation may be improved or challenged, depending on how external influences, relationships, and personal inclinations affect their feelings of autonomy and competence (Legault, 2017:2). A feeling of autonomy does not mean that humans want to steer away from structures, the influence of other humans, and the relationships that they have formed with them (Sheldon & Prentice, 2017:7). Instead, an autonomous disposition means that humans strive to find their own unique approach to working with social forces and

directives, finding a baseline of what they regard as essential and adopting these set ways of life (Sheldon & Prentice, 2017:7).

2) The **Organismic Integration Theory** (OIT) refers mostly to extrinsic motivations and internalising these motivations; in other words, what motivations are necessary for consumers to engage in activities that they do not find enjoyable or desire to partake in (Legault, 2017:3). The relative autonomy continuum model (RAC) forms part of the OIT. This model suggests that all extrinsic forms of motivation exist within this continuum, ranging from controlled to autonomous (Legault, 2017:3; Sheldon & Prentice, 2017:8), with the least autonomous end being external regulation and the most autonomous end being integrated regulation (Ryan, 2009:848). Furthermore, the OIT suggests that an individual experiencing choice or feeling competent and connected to other individuals involved will be more likely to accept, internalise, and integrate a set value or practice (Ryan *et al.*, 2009:112). Besides, the internalisation of cultural practices results in the achievement of greater wellness and performance (Ryan, 2009:848).

3) The **Causality Orientations Theory** (COT) describes the differences in how individuals orientate themselves in different situations and how their regulatory behaviour changes (Ryan, 2009:848). The COT consists of three types of orientation, namely autonomous, impersonal, and controlled orientation (Deci & Ryan, 2015:488; Deci & Ryan, 2002:21). Each of these orientations describes how consumers orientate themselves to behave in different environments. Consumers with an autonomous orientation are more likely to interact in situations where they feel that they are in control of their behaviour, and tend to seek out methods to transform difficult situations into situations where they can take control (Sheldon & Prentice, 2017:7). Impersonal orientation occurs where there is no intentionality fuelling a specific behaviour, meaning that individuals will participate with no intentionality towards the situation and will generally be detached from the situation (Legault, 2017:4). Controlled orientation suggests that a person will act with intention towards a situation, but with their behaviour being oriented toward conforming with the expectations, demands, and restrictions of the environment (Legault, 2017:4); thus, the behaviour will be controlled by the characteristics of the situation (Sheldon & Prentice, 2017:7).

4) The **Basic Psychological Needs Theory** (BPNT) is a universal theory that relates to psychological well-being (Deci & Ryan, 2002:23; Deci & Ryan, 2015:489). The BPNT argues that the basic needs of autonomy, competence, and relatedness are essential to health and well-being (Legault, 2017:5). The BPNT theorises that each need adds its own significant value to the psychological wellness of the individual, and the outcome of the individual's behaviour within a situation is a function of its relatedness towards the satisfaction of their

needs (Ryan, 2009:848; Sheldon & Prentice, 2017:10). This theory involves the need for autonomy – that is, the need for individuals to be in charge of their own behaviour – and consider their need to be competent and effective (Ryan *et al.*, 2009:115). The needs mentioned above have a significant effect on the sustainability of intrinsic motivation; individuals strive to achieve more, gain more experience, and learn as they progress through life. Lastly, relatedness also entails a psychological need within the SDT; the SDT stipulates that all individuals feel the need to belong and connect with other people to keep their psychological and physical health intact (Ryan *et al.*, 2009:115). Therefore, people rely on healthy relationships to sustain and satisfy their three basic psychological needs (Sheldon & Prentice, 2017:10).

5) The **Goal Contents Theory** (GCT) concerns intrinsic and extrinsic motivations as they relate to consumers' setting of their own types of goals for various occasions and reasons (Deci & Ryan, 2015:490). However, extrinsic goals based on the achievement or sustaining of an image and materialism do not contribute to need satisfaction and the well-being of individuals (Niemic *et al.*, 2009:291). Intrinsic aspirations such as healthy relationships, growth, and charity work positively contribute to need satisfaction and ultimately aid in the health and well-being of individuals (Legault, 2017:5; Sheldon & Prentice, 2017:10). Additionally, individuals are more likely to adhere to and be fulfilled by intrinsic values rather than extrinsic values (Legault, 2017:6; Sheldon & Prentice, 2017:10). It is evident from the literature that when the SDT focuses on goals, the focus requires shifting to intrinsic motivation and personal need satisfaction (Ryan, 2009:848).

6) The **Relationship Motivation Theory** (RMT) addresses the need for relatedness – that is, the need of individuals to form and maintain healthy relationships that support autonomy and competence (Deci & Ryan, 2015:490; Legault, 2017:6). However, the RMT emphasises that the need for relatedness in relationships goes hand in hand with autonomy and competence (Legault, 2017:6). This theory further suggests that people will experience fulfilling relationships when they are more autonomously motivated (Legault, 2017:6). In essence, the RMT explains the importance of the dynamics between autonomy and relatedness in healthy relationships by maintaining mutual respect and allowing the other to be motivated on their own terms (Sheldon & Prentice, 2017:12).

The SDT describes the different types of motivation amongst consumers and the required individual psychological need satisfaction for optimum motivation and well-being (Legault, 2017:7). Moreover, the SDT provides a theoretical background to how consumers' desire for autonomy, competence, and relatedness may be fulfilled, whilst the six additional theories

create a better understanding of the SDT. As this study attempts to describe the motivations of consumers, the SDT provides a suitable theoretical foundation for this study.

2.5. CONCLUSION

It is evident from the literature that in modern, urbanised society, two aspects, namely health and lifestyle habits, have enjoyed increased importance with regard to the role that they play in consumers' well-being. In addition to these two aspects, NCDs have also started playing an increasing role in the well-being of consumers in low- and middle-income countries. Although not limited to, NCDs have been shown to result from consumers' neglecting their health and maintaining poor lifestyle habits. Health is further divided into mental and physical health. The former is influenced by external stressors and the latter by consumers' nutrition or food consumption, the amount of physical exercise they get, and the amount and quality of their sleep.

In the South African context, consumers in an urbanised society can be classified according to specific demographic characteristics, including their geographic representation, age, income level, and level of education. Each of these demographic sub-cultures has a significant effect on consumers' motivation and approach towards their health and lifestyle habits. A geographic sub-culture forces a consumer to adapt to a lifestyle defined by their geographic area of residence. The generation that a consumer belongs to further guides their lifestyle habits within an urbanised setting. For instance, Baby Boomers value health, even though they show significant trends of sedentary lifestyles. Those from Generation X focus on a work-life balance, while the Millennials live by social expectations and technological advancements. The literature further suggests that the income level of a consumer is directly proportionate to their level of education. Ultimately, the higher the consumer's level of education, the better their ability will be to make informed decisions regarding healthy lifestyle habits and financially maintaining a healthy lifestyle.

In this literature review, the researcher also discussed and confirmed behaviours that influence healthy lifestyle habits. Behaviours around food consumption, physical activity, leisure time, sleep patterns, and stress all play a vital role in the healthy lifestyle of the consumer. In general, either external stimuli or internal stimuli influence each of these behaviours. The application of these behaviours in a positive habitual manner (for example, engaging in regular physical activity, ensuring quality sleep, and following stress management programmes) can ultimately lead to a healthy lifestyle and the enhanced well-being of the consumer.

From the literature, it is evident that consumers pursue healthy lifestyle habits if they are thoroughly motivated to do so. Consumers act upon both intrinsic and extrinsic motivation, with the former being internally regulated by driving forces within consumers and the latter, externally regulated by their social and workplace environments. The motivation of consumers is further explained and tested by the SIMS, which comprises intrinsic motivation, extrinsic motivation, identified regulation, external regulation, and amotivation.

The SDT was furthermore applied to this study to identify the motivations behind the behavioural patterns of consumers. Three types of intrinsic motivation exist according to the SDT, namely: autonomy, competence, and relatedness. In addition to the leading theory, six supportive theories subsist within the SDT to further understand consumer motivation. These six theories are: 1) *CET*, 2) *OIT*, 3) *COT*, 4) *BPNT*, 5) *GCT*, and 6) *RMT*.

From the evidence gleaned from the literature, the researcher proposes that consumers may not understand the effect that the urban corporate environment has on their healthy lifestyle habits and, ultimately, their health. Healthy lifestyle habits are crucial for the well-being and health of consumers. If employers take into account the different demographic characteristics of their employees (i.e., consumers) and understand how these consumers are motivated, they can effectively motivate them within the urban corporate environment and design employment wellness programmes that have a lasting effect on consumers' well-being.

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CHAPTER 3

METHODOLOGY

3.1. INTRODUCTION

This chapter discusses the methodology of the present study, paying attention to the research design, study population and sampling methods. Thereafter, the focus is on the data collection, development of questionnaires, statistical analysis as well as confirming the reliability and validity of the methods. Finally, the ethical considerations are discussed. Being an affiliated study, it is based on two objectives of the main study. Data collection took place already during the main study. Thus, the methodology on which the study reports is used in the main study, except for the data analysis. In this regard, the present study elaborates on the primary analysis which the original study used for previously collected data.

3.2. RESEARCH DESIGN

The research design used for this study was a quantitative, descriptive, and cross-sectional survey. *Quantitative research* was preferred as the study's method since it offers definite results and tends to be more consistent when investigating different respondents (Botma *et al.*, 2016:82). A *descriptive design* allowed the researcher to describe the situation (Christensen *et al.*, 2015:46) of lifestyle habits and motivation among consumers in an urban corporate environment. A *cross-sectional design* focuses on a cross-section of the population at an exact point in time to obtain the necessary data (Botma *et al.*, 2016:113). Data are collected only once over a brief period (Christensen *et al.*, 2015:338), which the present study intended. Furthermore, cross-sectional methods are time-efficient (Lavrakas, 2008:171), relatively simple and less expensive. This is compared to longitudinal methods (Yamamoto; 2007:89) where data are collected over an extended period, allowing for causal relationships. The present study used scaled questionnaires to determine consumers' motivation for healthy lifestyle habits, thus indicating *survey research*. The latter research method was deemed suitable for this study as surveys typically use questionnaires or interviews that prompt respondents about their attitudes or various forms of behaviour (Christensen *et al.*, 2015:338), such as habits or motivations.

3.3. STUDY POPULATION

The population for this study comprised consumers working in an urban area (i.e. three major cities Pretoria, Durban and Cape Town) within a corporate setting of a financial institution

based in South Africa and meet the inclusion criteria as outlined in section 3.4. A more accessible sample was used from the identified population. The aim was to obtain a smaller group of individuals and narrow down the population (Grove *et al.*, 2015:250). This population was considered ideal since the literature indicates that various factors influence consumers in an urban environment, for example, globalisation, social pressure and urbanisation. Due to environmental stress within such an environment, the selected population would be more susceptible to non-communicable diseases (NCDs) (Starcke & Brand, 2012:1228). The present study has been based on data from the mentioned population. The reason is that work demands (Thendo *et al.*, 2013:999) and work-related stressors (Marcatto *et al.*, 2016:274) tend to influence consumers' healthy lifestyles.

3.4. SAMPLING

A *non-probability sampling* method allowed access to the constricted population in this study (Maree & Pietersen, 2019a:219). In particular, *convenience sampling* was used to recruit respondents from the three head offices of a corporate financial institution, typical of urban corporate environments in different areas within South Africa. At the time of the data collection, a memorandum of understanding was established between the specific institution and the School for Biokinetics and Recreational Science (supervising the main study) from North-West University (NWU).

The main study used respondents from the mentioned financial institution as the study population. Convenience sampling obtains data relatively cost-effectively and directly, seeing that the population's exponents are conveniently and readily available (Emerson, 2015:166; Etikan *et al.*, 2016:2; Maree & Pietersen, 2019a:219). However, the mentioned attributes are also a cause for criticism against non-probability sampling. Nevertheless, this is the most common sampling method for selecting respondents at a specific place and time (Acharya *et al.*, 2013:332). Furthermore, convenience sampling was the method preferred since the aim was not to generalise the findings to the entire population (Etikan *et al.*, 2016:1). Thus, the findings apply only to the participating respondents in the mentioned urban corporate environments. This study used the convenience sampling method, enhanced by inclusion criteria (specified below), to understand the real-life experience of a specific group of consumers within an urban corporate setting.

As a further effort to limit bias, which is commonly associated with convenience sampling (Botma *et al.*, 2016:125), three head offices in different areas across South Africa were chosen as locations to conduct the study, namely Pretoria, Durban, and Cape Town. However,

participation from these locations was based on voluntary convenience sampling. All the employees who met the inclusion and exclusion criteria, participated after being invited electronically (through e-mail). By providing computer stations, all applicable candidates at the three head offices of the corporate financial institution had a fair and equal chance to participate in this study. The researchers followed this process to ensure all respondents had access to the survey, thus excluding no one.

The inclusion and exclusion criteria applied to this study required the following from the respondents:

- Be an employee within this organisation.
- Be the lawful age of 18 years and older.
- Have access to a computer with an internet connection, to fill out the online questionnaire.
- Be computer literate since the questionnaire was distributed in electronic format.

The inclusion criteria ensured that employees within the organisation of all ages and ethnic groups had an equal chance to participate in the study (Babbie, 2013:134). These criteria are as follows:

- Respondents who were not employed permanently by the corporate financial institution at the time of data collection.
- Respondents employed on a contract basis by the corporate financial institution.

It was found that all the data describing respondents' demographics, lifestyle habits and motivation, applies to the present study. Therefore, inclusion and exclusion criteria were the same as for the main study and data from the total sample were included in this affiliated study.

The Statistical Consultation Services (SCS) provided by the NWU recommended a sample of 200 respondents, which would be sufficient to allow an exploratory factor analysis (EFA). However, the main study could manage to recruit only 157 respondents, even after several attempts to improve the response rate. After inspecting the data, the statistician confirmed that by using the smaller sample size, it was still possible to conduct a meaningful EFA and establish construct validity. The inspection of the EFA also registered an acceptable Kaiser-Meyer-Olkin (KMO) value of .70.

3.5. DATA COLLECTION

As mentioned previously, the present study utilised a primary analysis of data that were collected priorly. The data from the main study, which also applied to this study, reflected respondents' demographic information, their lifestyle habits and motivations to follow certain habits. The main study collected this data to develop a profile of consumers' healthy lifestyle habits and understand what motivations are needed to encourage them to follow a healthy lifestyle in a South African urban corporate setting.

Employees based at the three head offices of the particular urban corporate financial institution received an invitation to take part in the survey. Once agreed to participate in the study, the employees received an online questionnaire through an electronic link in an e-mail. This online form of distribution ensured the questionnaires could be managed thoroughly (Fielding *et al.*, 2017:44). The advantage of such questionnaires is that respondents tend to be more honest when answering sensitive questions. A certain disadvantage is that respondents may withdraw before completing the questionnaire, which may lead to lower response rates (Phellas *et al.*, 2012:188-189). Since English is a corporate language (Neeley, 2012:117), it was expected that all employees at the corporate financial institution understood the questions. Therefore, the study only provided an English questionnaire.

Consumers' motivation for healthy lifestyle habits is a challenging field for observation; therefore, respondents had to answer the questionnaire based on self-perceived lifestyle habits and motivational factors. Thus, the instrument used by the present study for data collection was a self-report questionnaire. Electronic questionnaires allow for anonymity (Botma *et al.*, 2016:135). Furthermore, the survey can be completed within a limited time. A possible limitation of electronic questionnaires is that respondents may be biased (Lavrakas, 2008:3). Aspects such as misunderstood terminology, non-disclosure and mischievous responses may cause respondent bias (Cimpain, 2017:518). However, through proper design, the questionnaire prevented the issues mentioned above as far as possible.

3.6. QUESTIONNAIRE DEVELOPMENT

The questionnaire was developed during the main study, allowing the present study to use research questions and data from the original study. This section discusses questionnaire development to indicate how the main study executed the process. Specific steps were followed to develop a comprehensive questionnaire that meets specific requirements (De Leeuw, 2008:314). The *instructions* of the questionnaire were provided in language that was

simple, concise, and clear to all respondents (Maree & Pietersen, 2019b:200). The *appearance* of the questionnaire reflected a user-friendly design that appeals to the respondents (Maree & Pietersen, 2019b:200). Special attention was paid that the *wording of the questions* was clear and understandable to the selected respondents (Maree & Pietersen, 2019b:201). During the main study, the researcher conducted cognitive interviews to confirm the content as well as establish clarity and intelligibility of the questions, until comments were repeated (Boeije & Willis, 2013:87). Comments and recommendations from the cognitive interviews helped the researcher adjust the final administered questionnaire derived from the main study.

3.6.1. Theoretical background to the study

The main study involved a literature review at the same time the questionnaire was developed. During that stage, the present study was undertaken as an affiliation of the main study. The present study, furthermore, includes a thorough literature review on consumers' lifestyle habits and their motivation to follow these habits in an urban corporate setting.

3.6.2. Item pool and format of measurement

Based on the original literature review, authors from the main study generated an item pool (Steyn, 2016:19). Seeing that the original study posed various objectives, each objective or construct was included in the original questionnaire (Devellis, 2012:74). All the items in the questionnaire consisted of 5 –*point Likert-scaled questions* that directed respondents to select an answer to indicate the severity or intensity of their response (Maree & Pietersen, 2019b:208).

The questionnaire consisted of various sections, but for the present study, only three sections (Addendum A) were applicable:

- (1) Demographics (Section A);
- (2) Consumers' lifestyle habits (Section B); and
- (3) Consumers' motivations to follow these lifestyle habits (Section C).

3.6.2.1. Demographic information

Demographic information may affect a consumer's ability to follow and maintain a healthy lifestyle. The demographic information (Section A) was collected through a multiple-choice, drop-down bar which provides options for each question (Addendum A). Furthermore, the questionnaire consisted of three demographic categories:

- **Transport and residence:** transportation type, travelling distances, time spent on the road from home to work, as well as the residence type.
- **Work:** profession, duration of employment, income group, daily hours at work, or spent on work.
- **Personal information:** gender, age, children, children's age, language, religion, race, and level of education.

The demographic information established the context for the study and clarified uncertainties about the background information of participants. These demographic variables helped the researcher analyse possible associations between the healthy lifestyle habits and motivations of consumers from different demographic subgroups.

3.6.2.2. Consumers' lifestyle habits

An adapted version of the lifestyle habit questionnaire from Belloc and Breslow (1972:46-64) supplemented with related questions from the Lifestyle Profile II questionnaire (Walker *et al.*, 1995) was employed to collect data on respondents' lifestyle habits (Section B) in general. The original questionnaire consisted of seven dichotomous questions ("yes" or "no"), providing an index of respondents' healthy lifestyle habits. However, the existing dichotomous questions were replaced by a five-point Likert scale (1 = Never; 2 = Seldom; 3 = Sometimes; 4 = Often; 5 = Always). This scale was used to measure the extent or frequency that respondents tend to engage in certain lifestyle habits. Since the original instrument did not include a measurement scale as in the present study, Cronbach's alpha values of the original measurement instrument are not available, but Belloc and Breslow (1972:411) reported these measures as "highly reliable". Health studies in South Africa successfully confirmed the validity and reliability of Belloc and Breslow's original lifestyle habit questionnaire (Grové & Wilders, 2009:41; Labuschagne *et al.*, 2011:84). By adapting the original scale to a Likert type, reliability and validity could be determined for the present study.

3.6.2.3. Consumers' motivations to follow certain lifestyle habits

The Situational Motivation Scale (SIMS) (Guay *et al.*, 2000:175-213) was used to determine consumers' motivation (Section C) in following a healthy lifestyle. Constructs included in this scale are: intrinsic motivation, identified regulation, external regulation, and amotivation. The items in the Likert scales, used to determine situational motivation, were adapted from Guay *et al.* (2000:175-213) to measure respondents' current lifestyle habits. The original five-point scale was adapted from the seven-point Likert scale for a more direct interpretation (1 = strongly disagree, 2 = disagree, 3 = tend to agree, 4 = agree, 5 = strongly agree). Guay *et al.* (2000:203) reported Cronbach's alpha values between .62 and .86 for the internal validity of

the SIMS. These scores make the instrument suitable to measure consumers' motivation to follow healthy lifestyle habits. Cronbach's alpha values were also determined for the present study within a South African urban corporate context.

3.7. STATISTICAL ANALYSIS

The researchers consulted the SCS of the NWU, when planning and developing the research instrument for the main study, as well as for the present, affiliated study. The SCS were responsible for analysing the data for the present study and assisted with the interpretation. The IBM Statistical Package for the Social Sciences (SPSS) Version 25, Release 20.0 (SPSS) was used to analyse the data and AMOS version 25. for the confirmatory factor analysis (CFA).

Table 3.1 below summarises the variables that were analysed and the statistical measures applied to reach the specified objectives. Demographic characteristics (Section A) used descriptive statistics to calculate frequencies, means, and standard deviations. The distribution of the data was eye-balled to ensure that there were no serious deviations from normality. Healthy lifestyle habits (Section B) and the situational motivations to pursue their healthy lifestyle habits (Section C) were reported with mean factor scores. Associations between healthy lifestyle habits and situational motivations of respondents from different demographic subgroups (Sections A, B, C) were compared by analysis of variance (ANOVA), and independent t-tests with Cohen's *d*-values, where *d* = 0.2 indicates a small; *d* = 0.5 a medium, and *d* = 0.8 a large effect size. Due to the use of effect sizes and selecting a non-representative sample, p-values were not applicable but were reported only for comprehensiveness. Small effect sizes were not reported as they indicated insignificant findings in practice. Correlations with *r* = 0.1 were interpreted with a small, *r* = 0.3, a medium, and *r* = 0.5, a large effect. However, only correlations were reported with tendencies of practical significance (i.e. medium and large effects).

Table 3.1: Operationalisation of objectives

Objective		Section in questionnaire	Construct	Statistical analysis
1	Describe the demographic characteristics of consumers	A	• Age • Gender • Children • Qualification • Race • Religion • Language • Residence • Occupation • Salary • Transport • Travelling hours • Working hours	Descriptive statistics: Frequencies, means and standard deviations
2	Determine consumers' healthy lifestyle habits	B	5-point Likert scale (1=Never; 2=Seldom; 3=Sometimes; 4=Often; 5=Always)	Exploratory factor analysis Confirmatory factor analysis Cronbach's alpha Mean factor scores
3	Establish the situational motivations that drive consumers to pursue healthy lifestyle habits	C	Situational Motivation Scale (SIMS) (1=Strongly disagree; 2=Disagree; 3=Tend to agree; 4=Agree; 5=Strongly Agree) • Intrinsic motivation • Identified regulation • External regulation • Amotivation	Exploratory factor analysis Confirmatory factor analysis Cronbach's alpha Mean factor score
4	Examine the associations between the mentioned habits and situational motivations of consumers from different demographic subgroups	A, B, C	Demographics Lifestyle habits Motivation	ANOVA Independent T-tests Correlations With effect sizes

3.8. RELIABILITY AND VALIDITY FOR THE PRESENT STUDY

The item pool of the total questionnaire for the main study was reviewed by eight specialists in various disciplines within the Faculty of Health Sciences. These included experts in Consumer Sciences; two in Biokinetics & Wellness; one medical doctor; one expert in Nutrition; one statistician; and a further expert in an urban corporate environment, following Steyn's (2016:22) guidelines for reliability and validity

3.8.1. Reliability

This study considered internal reliability, which is used when results need to be highly similar and consistent (Pietersen & Maree, 2019:261). Cronbach's alpha values helped determine the internal reliability of factors from the motivation and lifestyle habit scales, assisted by inter-item correlations. Alpha values closest to 0.9 indicate a highly reliable scale, whereas a reliability estimate of 0.8 is regarded as moderately reliable but also an acceptable score (Pietersen & Maree, 2019:261). Taber (2018:1293) and Field (2009:675), states that a value of 0.7 is also satisfactory, especially when measuring psychological constructs. However, Malhotra (2010:319) found that a Cronbach's alpha value of 0.6 can be acceptable as well. Cronbach's alpha values for this study are reported together with the results in Chapter 4.

3.8.2. Validity

Face and content validity were considered for the main study. The validity was established through a comprehensive literature review, formulating clear questions, acquiring expert evaluation, and pre-testing the instrument (Botma *et al.*, 2016:175; Pietersen & Maree, 2019:262).

Construct validity for the internal motivation, and the lifestyle habit scales was determined by using EFA followed by CFA. EFA was done using principal axis factoring with oblimin rotation, where the Kaiser-Meyer-Olkin (KMO) measure was important to assess sampling adequacy, percentage of variance and factor loading. The CFA confirmed the factor structure yielded by EFA, thereby confirming construct validity. Results for EFAs and CFAs are reported in Chapter 5.

3.9. ETHICAL CONSIDERATIONS

The Health Research Ethics Committee (HREC) of the Faculty of Health Sciences of the NWU (NWU-00202-14-A1) gave ethical approval for the main study as well as for the present

affiliated one (NWU-00964-19-S1). This research adhered to the typical ethical requirements for research with human participants.

3.9.1. Beneficence, non-maleficence, and risk-benefit analysis

As mentioned previously, consumers worldwide face various lifestyle-related health problems. This study strived to gain a deeper understanding of consumers' motivations to follow healthy lifestyle habits in a South African urban corporate setting. The knowledge gained from this study's results can aid as a basis to develop future programmes that will, in turn, benefit consumers. Therefore, the welfare of the consumer was considered throughout the study. It is essential for a study that the benefits exceed the anticipated risks (Moodley & Naidoo, 2011:330). In this regard, the present study involved a qualified research team to prevent and mitigate possible harm to participants.

No direct benefits were associated with the main or affiliated studies. An **indirect benefit** of participating in this study was that the results could serve the broader community in terms of consumer education and enhanced social responsibility (Steyn, 2016:25). Minimal risks applied to participation in the main study and harm was minimised:

- **Physically:** Respondents may have experienced the discomfort of time loss when completing the questionnaire. However, such loss was limited as the questionnaire was developed to be completed in approximately 15 minutes.
- **Psychologically:** Participants may have experienced a measure of boredom when completing the questionnaire. However, this possibility was minimised by formulating the questions to be brief and structured logically. The questionnaire was also designed to be attractive to respondents.

In this affiliated, master's study, no further contact with participants or recruitment took place that may have caused risks. Therefore, the present research can be categorised as a minimal-risk study. In the main study, respondents were informed that the research team would keep their results safe on a password-protected computer. Storage of the data took place according to the protocol of the NWU.

The only risk involved with data in the affiliated study was the possible loss of confidentiality. However, this risk was overcome by safe-keeping the data for both the main and affiliated studies. The questionnaires were also completed fully anonymously, preventing unwanted exposure of respondents' identity in the process. The study involved a qualified research team

in preventing or minimising the likelihood of compromising participants' privacy and confidentiality during the research process.

3.9.2. Respect, dignity, and autonomy

Respondents were treated with dignity and respect throughout the main study. They were informed that they may withdraw during any stage, without penalty (Moodley & Naidoo, 2011:330, 332). Respondents' time was respected since one questionnaire was used with different sections during a survey relevant to the aim and objectives of the main study. In the affiliated, master's study, no direct contact with participants was necessary. The data were used respectfully, which protected the respondents' dignity and maintained their autonomy.

3.9.3. Relevance and value

The questionnaire consisted of relevant questions that provide insight into the topic and contribute to future research in this field. Strydom (2011:116) stresses that researchers must contribute to scientific knowledge when developing questions. For the affiliated study, only two of the main study's objectives were found to be relevant, namely: healthy lifestyle habits and the motivation of consumers to pursue a healthy lifestyle. The reason is that the primary analysed data were reported for the first time. Therefore, the results still do have value, seeing that it may deepen consumers' understanding of leading a healthy lifestyle and improve their motivation to follow it. The value of the present, affiliate study is that associations were drawn between demographic characteristics of individuals, their healthy lifestyle habits, and their motivations to follow these habits. Findings of this study can thus contribute to the development of necessary programmes that will improve consumers' lifestyle and benefit them in general.

3.9.4. Scientific integrity

Scientific integrity is an essential component of research ethics. Therefore, the main study developed the aim to read clear and concise. The affiliated study established a new aim suited to its objectives, for an in-depth understanding of motivations for consumers' lifestyle habits. The data of this research were not fabricated or falsified to suit the study. Therefore, the results are represented accurately, and conclusions are drawn accordingly (Hiney, 2015:4). The researcher and study leaders underwent ethics training that prepared them to prevent any form of misconduct.

3.9.5. Fair selection, justice, equity, and participation

For the main study, advertisements were placed at financial institutions to make consumers (employees) aware of the project. The advertisements were placed in different areas of the building that employees frequently visit, such as restrooms, kitchens, and lounges. Each branch manager acted as a gatekeeper and did not receive incentives for recruiting respondents. Respondents were sent a link through e-mail that contained a written informed consent page (see Addendum B). Respondents had 24 hours to consider the information about participating in the study before they could access the questionnaire. The provided link stated the inclusion and exclusion criteria clearly. Computer stations were available for employees to allow everyone equal opportunity to participate. The affiliated study did not require further recruitment, seeing that the obtained data from all respondents involved in the main study were also relevant to the aim of the affiliated one.

3.9.6. Permission and informed consent

An online informed consent form was attached along with the questionnaire. Respondents first had to acknowledge and accept the form before they could access the questionnaire. After deciding to provide informed consent, they had to click on the “agree” button to continue filling out the questionnaire in their own time. In this way, the respondents agreed to the conditions mentioned in the mentioned form. Therefore, respondents were provided with the contact number of the researcher, should there be uncertainties or questions.

Respondents were informed that their anonymity was ensured. Furthermore, they were allowed to withdraw from the study at any preferred time. They were assured of no repercussions if they did not want to continue with the questionnaire (Botma *et al.*, 2016:350). In addition, the study’s purpose was explained briefly allowing respondents to make an informed decision on whether to participate (Botma *et al.*, 2016:348; Walliman, 2011:47).

The affiliated study used two of the main study’s objectives. Only data gathered from the main study were used to formulate these two objectives; therefore, no further informed consent was necessary from the respondents.

3.9.7. Privacy and confidentiality

Privacy, also referred to as anonymity of respondents, is a critical aspect to consider in research (Maree & Van der Westhuizen, 2007:42). The corporate financial institution will remain anonymous when the researcher reports on the data and publishes the findings. The data obtained from the respondents who filled out the questionnaires contained only an

identification code to manage the data. Neither the researcher, nor the research team know the identity of respondents. The survey-administrator acted as a mediator between the researcher and respondents in order to ensure their anonymity.

The affiliated study maintained participants' anonymity by not receiving personal information about respondents. The data were provided to the master's student in an anonymous spreadsheet format as approved by the HREC.

3.9.8. Data management

A copy of the raw data from the main study was given to the SCS of the NWU for analysis. After data collection for the main study, the unprocessed data were stored at the NWU Potchefstroom Campus on a password-protected computer in room 110, building F15. Only the study leader could access the computer, being the individual responsible primarily for managing the data.

After this affiliated, master's study was granted ethical approval, the study leader sent the relevant collected data to the researcher in the form of a password-protected file. Thus, only the questions relevant to the affiliated study were included in this file. After the data were analysed, they were deleted from the master's student's computer and kept safe for an additional five years, as described in the main study.

3.9.9. Dissemination of research results

After completion, the results of this master's study will be summarised. Thereafter, an infographic, with a user-friendly depiction of the main findings and its significance, will be sent to the company through an e-mail link. Additionally, an article with the main findings of this study's results will be published.

3.9.10. Conflict of interests

There was no conflict of interests in the main study, nor in the present, affiliated one.

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CHAPTER 4

RESEARCH ARTICLE

Manuscript to be submitted for publication in the *Scientific African Journal*.

This article was prepared according to the author guidelines for submission to the *Scientific African Journal* (Addendum G). Due to the limited number of words, tables and figures allowed in this article, supplementary data tables are included in the form of an addendum (Addendum C).

TITLE:

The motivation for healthy lifestyle habits amongst South African urban corporate consumers

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ABSTRACT

The purpose of this study is to describe healthy lifestyle habits amongst consumers in a South African urban corporate setting and the situational motivations for them to follow these habits. Findings of this study contribute to understanding the associations between individuals' demographic characteristics, their healthy lifestyle habits, and their motivations to follow these habits, that is necessary for the development of programs that will improve consumers' lifestyle and benefit them in general. We employed a descriptive, cross-sectional survey in the form of an online questionnaire for this study. The questionnaire intended to measure consumers' demographic characteristics, healthy lifestyle habits, and situational motivations. Data were collected from South African urban corporate consumers (N = 157), using convenience sampling. The respondents were predominantly female. Most were well-educated, with almost three-quarters having obtained qualifications higher than grade 12. Respondents agreed that intrinsic motivation and identified regulation were the main contributing situational motivations for following their current lifestyles. Their agreement was supported further by correlations of intrinsic motivation and identified regulations with specific lifestyle habits regarding dedicated efforts, exercise and relaxation, and not smoking. However, extrinsic motivation and amotivation did not have noticeable associations with these respondents' healthy lifestyle habits. These associations indicate potential favorable outcomes due to consumers' healthy lifestyle habits being associated with inner desires or goals rather than any external stimuli. This study fills the gap in research on urban consumers' lifestyle habits and motivation by providing insights into the formulation of wellness programs that will assist employers to properly motivate their employees to participate in such programs. Previously, employers tended to rely on externally driven programs. However, this study's findings may direct them to focus instead on internally driven programs that will have a lasting effect on their employees' overall well-being.

Keywords: Consumers; Corporate setting; Habits; Healthy lifestyle; Motivation; South Africa

Paper type: Research paper

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4.1. INTRODUCTION

Healthy lifestyle habits and wellness have become increasingly significant amongst some sectors of consumers worldwide (Barauskaite *et al.*, 2018) as they begin to form part of a way of life that consumers regard as "normal". Inadequate adherence to healthy lifestyle habits could lead to lifestyle-related diseases such as non-communicable diseases (NCDs). The World Health Organization (WHO, 2018) considers NCDs as the most significant contributor to deaths worldwide, with approximately 71% of the annual deaths in the past decade being NCD-related. In South Africa, 39% of all deaths are a result of NCDs partly contributed by poor lifestyle habits that include inactivity, smoking, alcohol abuse, and unhealthy food choices (Cureau *et al.*, 2018; Millarini *et al.*, 2019).

Although the prevalence of and concerns over NCDs are continuously rising, healthy living has become a concept beyond mere physical well-being. Healthy living comprises physical activity, food consumption behavior, as well as mental health and other lifestyle issues (Euromonitor Research, 2017). A consumer's lifestyle encompasses their type of work, leisure-time patterns, motivations, desires and needs – in essence, the way that they live their life (Karmee *et al.*, 2017).

The work environment has an undeniable effect on consumers' health (Pinkstaff *et al.*, 2017). In particular, the urban work environment expects consumers to be stationed behind desks and work on computers continuously, evidently causing an increase in the sedentary behaviors amongst these consumers (WHO, 2017).

Employers attempt to increase consumers' productivity levels and promote their health through wellness programs that address healthy lifestyle habits (Pinkstaff *et al.*, 2017). The South African Department of Health has developed the "*National guide for healthy meal provisioning in the workplace*" to assist employers with integrating healthy meal provisioning into their employee wellness programs (Department of Health, 2016). However, employers have experienced that wellness programs do not have a lasting effect on consumers' health behavior (Horwitz, 2013), due to a lack of interest from consumers. This has resulted in employers tending to rely on external motivation in the form of incentives to motivate employees to adopt certain behaviors, such as healthy lifestyle habits (Osabiya, 2015). However, consumer motivation entails not only external motivation but also intrinsic (internal) motivation and amotivation (Guay *et al.*, 2000). It is, therefore, crucial to consider consumers' motivation to engage in a specific activity, known as situational motivation, popularly measured by the Situational Motivation Scale (SIMS) (Guay *et al.*, 2000).

In order to avoid the consequences of an unhealthy lifestyle, it is necessary to investigate the healthy lifestyle habits of consumers and the motivations necessary to encourage them to maintain such habits which may inform future interventions. This is especially relevant in a stress-prone urban corporate context. This study aimed to describe the healthy lifestyle habits, and the situational motivations for following these habits, amongst consumers in a South African urban corporate setting to provide a baseline for research about these habits in such a setting. Such research may furnish consumers and employees alike with ways to enhance and maintain healthy lifestyle habits. By applying various strategies in the urban work environment, employers will be better equipped to enhance overall situational motivation and, consequently, employees' overall health.

4.2. THEORETICAL BACKGROUND

Several factors motivate consumers to behave in a particular manner. This has given cause for different scales in the literature to measure consumers' motivation, such as the Consumer Motivation Scale (CMS) (Barbopoulos & Johansson, 2017) and the Situational Motivation Scale (SIMS). For this study, the SIMS was used due to the versatility that it offers. By applying the SIMS, consumers' direct responses towards an activity can be assessed (Guay *et al.*, 2000). The SIMS, therefore, allows the researcher to evaluate consumers' situational motivation when they engage in an activity (Guay *et al.*, 2000): in this case, healthy lifestyle habits.

The SIMS measures four critical constructs (Ryan & Deci 2020): (1) Intrinsic motivation describes the feeling of satisfaction and enjoyment while engaged in an activity that is freely chosen, with no external influences; (2) Identified regulation refers to any behavior that consumers choose to pursue themselves; (3) External regulation comprises the behavior of consumers when expected to act in a specific manner. This behavior can also be a result of avoiding negative consequences and is mostly motivated by an external reward; and (4) Amotivation refers to consumers who do not feel that they have a specific goal or purpose of accomplishing. Amotivated consumers mostly lack self-determination and are likely to feel incompetent, ultimately resulting in a negative outcome (Guay *et al.*, 2000).

The self-determination theory (SDT) presents the theoretical underpinning for the SIMS (Guay *et al.*, 2000) and, therefore, a suitable theoretical framework for consumers' situational motivation in our study. This theory gives an understanding of how consumers are intrinsically and extrinsically motivated (Guay *et al.*, 2000). It takes into account the basic needs of consumers, namely autonomy, competence, and relatedness. Autonomy describes

consumers' sense of ownership in relation to their actions to achieve a specific goal (DeHaan *et al.*, 2016; Ryan & Deci, 2020). Consumers lean towards autonomy when they have an interest (Gagné & Deci, 2005) and find value in the fulfilment of their set goal (Ryan & Deci, 2020), such as choosing to follow healthy lifestyle habits if they have set a personal goal to maintain a healthy lifestyle. Competence refers to consumers' longing for mastery, success, and growth (DeHaan *et al.*, 2016; Ryan & Deci, 2020). Within this study's framework, consumers may be driven by success and sustain healthy lifestyle habits to be capable and competent in their working environment. Consumers' need to experience a sense of connection and belonging encompasses relatedness (Ryan & Deci 2020); they have the urge to belong to certain social groups and therefore may choose healthy (or unhealthy) lifestyle habits accepted by this group. Research indicates that consumers from different cultures experience these needs; however, each to a different extent (Ryan & Deci, 2020).

If employers take a positive approach towards employee motivation, employees may be equipped with the necessary motivations to sustain healthy lifestyle habits (Osabiya, 2015). Hence, the application of the SIMS based on the SDT in the present study of healthy lifestyle habits is of the essence.

4.3. METHODOLOGY

The Health Research Ethics Committee (HREC) of the Faculty of Health Sciences of the North-West University (NWU) provided ethical approval for this affiliated study (NWU-00964-19-S1). This research adhered to all ethical requirements regarding research involving human participants.

4.3.1. Description of the study area and population

The population for this study included consumers working in an urban corporate setting in three major cities, namely Pretoria, Durban and Cape Town, for a financial institution based in South Africa. The literature indicates that aspects such as globalization, social pressure, and urbanization influence consumers in an urban environment, predisposing them to a higher chance to develop NCDs due to environmental stress (Starcke & Brand, 2012). In addition, work demand (Thendo *et al.*, 2013) and work-related stressors (Marcatto *et al.*, 2016) both influence consumers' healthy lifestyles.

4.3.2. Sampling method

This study formed part of a more extensive study of consumers' healthy lifestyle habits. The research design was a quantitative, descriptive cross-sectional survey. Convenience sampling

was employed to recruit respondents from the three head offices of a corporate financial institution that typify three urban corporate environments in different areas of South Africa. We employed inclusion criteria to strengthen the sampling method to understand a specific group of consumers in an urban corporate setting. Potential respondents had to be permanent employees of the organization, 18 years or older, and computer literate, with access to a computer with an internet connection.

4.3.3. Data collection

The instrument for data collection for this study was an electronic questionnaire administered through QuestionPro (www.questionpro.com). The link to the questionnaire was distributed to respondents via email. The study only provided the questionnaire to be administered in English, a corporate language (Neeley, 2012), since we expected that all employees at the corporate financial institution should understand English. Along with the questionnaire, the respondents were provided with an online informed consent form to acknowledge and accept. Once the respondents had agreed to all the conditions stated in the informed consent form, the questionnaire was made available to them.

The sections of the questionnaire concerning this study included demographics (section A), lifestyle habits (section B), and motivation (section C). The Likert scale items used to determine situational motivation were adapted from Guay *et al.* (2000) to relate to respondents' current lifestyle habits. We also adapted the original seven-point Likert scale to a five-point scale to facilitate interpretation (1 = strongly disagree, 2 = disagree, 3 = tend to agree, 4 = agree, 5 = strongly agree). The lifestyle habits index scale of Belloc and Breslow (1972), supplemented with related questions from the Lifestyle Profile II questionnaire (Walker *et al.*, 1995), was employed to collect data on respondents' lifestyle habits in general. The original questionnaire consisted of seven dichotomous ("yes" or "no") questions providing an index of respondents' healthy lifestyle habits, which we adapted to a five-point Likert scale (1 = Never; 2 = Seldom; 3 = Sometimes; 4 = Often; 5 = Always) to allow respondents to make a selection based on the frequency with which they followed certain habits.

4.3.4. Validity and Reliability

Face and content validity were incorporated through a detailed literature review, clear questions, expert evaluation, and pre-testing of the instrument (Pietersen & Maree, 2019). We ensured construct validity for situational motivation and the lifestyle habit scales through EFA, followed by confirmatory factor analysis (CFA). EFA was conducted for the SIMS and lifestyle habit scales using principal axis factoring with Oblimin rotation, accompanied by the Kaiser-

Meyer-Olkin (KMO) measure of sampling adequacy and percentage of variance explained by extracted factors.

Cronbach alpha values and inter-item correlations assisted in determining the internal reliability of factors of the motivation scale as well as of the lifestyle habit scale. We recorded a Cronbach alpha value of more than 0.6 for all three healthy lifestyle habits factors – Malhotra (2010) shows that a value of 0.6 is satisfactory, which confirms acceptable internal reliability for the healthy lifestyle habit factors. All four situational motivation factors showed highly reliable internal consistency, with Cronbach alpha values ≥ 0.8 (Pietersen & Maree, 2019).

4.3.5. Statistical analysis

The IBM Statistical Package for the Social Sciences (SPSS) Version 25, Release 20.0 was used to analyze the data, except for the CFA, which was conducted using AMOS version 25. We used the following statistical analyses in the different sections of the questionnaire: descriptive statistics, i.e. frequencies, means and standard deviations, were used for demographic characteristics (Section A); while healthy lifestyle habits (Section B) and subjects' situational motivations to pursue their healthy lifestyle habits (Section C) were reported as mean factor scores. Associations between healthy lifestyle habits and the situational motivations of consumers from different demographic subgroups (Sections A, B, C) were examined by ANOVAs, and t-tests and Cohen's d -values were used as effect sizes: $d = 0.2$ was interpreted as a small effect, $d = 0.5$ as a medium effect, and $d = 0.8$ as a large effect size. Due to the use of effect sizes, p-values were not applicable, but they were reported for the sake of comprehensiveness. Small effect sizes were not reported, as they indicate insignificant findings in practice. Spearman's rank-order correlations with $r = 0.1$ were interpreted as a correlation with a small effect, $r = 0.3$ as a medium effect, and $r = 0.5$ as a large effect. However, only correlations with tendencies that were of practical significance (thus, correlations with medium and large effects) were reported.

4.4. RESULTS AND DISCUSSION

4.4.1. Demographic characteristics

A total of 157 respondents took part, which, following further investigation, proved feasible to perform a meaningful exploratory factor analysis (EFA) and ensure construct validity. Table 1 depicts the demographic profile of the respondents ($N = 157$). Slightly fewer than half of the respondents (47.7%) were between 18 and 34 years, implying that the majority of the respondents were from Generation Y and Generation Z. None of the respondents were older than 54 years, thus excluding the Baby Boomers generation from the sample. This lack of

older respondents corresponds with most of the South African population in the work environment being between 25 and 44 years old (Employment Promotion Programme, 2017). The majority of the respondents (67.1%) were female, and English was the primary home language amongst respondents (45.5%).

Half of the respondents had either one or two children, while more than 40% did not have any children. Most respondents were well-educated, with almost three-quarters (74.2%) having obtained qualifications higher than grade 12, possibly since specialized occupations require well-educated consumers (Jansen van Rensburg, 2014). Such occupations place consumers at a higher income level, validating that most of the respondents had the financial means to support a family. Moreover, 61.7% of the respondents were homeowners, while 63.1% reported that they resided in a house. Respondents' most prominent means of transport was a personal vehicle (73%). Most respondents, therefore, had the means to afford both a house and a personal vehicle. Nearly all respondents' primary office was not at home (98.5%), and more than half (55%) of respondents spent 30 minutes or less travelling between their work and home.

Furthermore, 94.8% of respondents typically worked a full day or between 9 and 12 hours; yet 48.5% did not spend any time working at home. These findings confirm that respondents in this urban corporate setting worked long hours and commuted to work, although commuting times were not very long. However, these aspects may cause consumers in an urban corporate setting to be more prone to stress (Garg & Yajurvedi, 2017; Srivastava, 2018), which may ultimately influence their healthy lifestyle habits (Kawada & Suzuki, 2008).

Table 1: Frequencies and distributions of respondents' self-reported demographic (N = 157)

Demographic characteristics	Frequency (%)
Age	
Between 18 and 34 years	71 (47.7)
Between 35 and 44 years	39 (26.2)
Between 45 and 54 years	39 (26.2)
55 years and older	0 (0)
Gender	
Male	49 (32.9)
Female	100 (67.1)
Number of children	
None	65 (43.6)
One	23 (15.4)
Two	52 (34.9)
Three	9 (6.0)
Education	
Lower than Grade 12	3 (2.1)
Grade 12	34 (23.8)
Diploma requiring fewer than 3 years of study	33 (23.1)
Degree/ Diploma requiring 3-4 years of study	52 (36.4)
Post-graduate	21 (14.7)
Race	
White	68 (47.9)
Black	32 (22.5)
Coloured	15 (10.6)
Asian, Indian, Other	27 (19.0)
Language	
Afrikaans	46 (32.0)
English	65 (45.5)
African languages, other	32 (22.4)
Homeowner	
Yes	87 (61.7)
No	54 (38.3)
Type of Residence	
House	89 (63.1)
Townhouse	27 (19.1)
Apartment/Flat	21 (14.9)
Informal housing	1 (0.7)
Room in house	1 (0.7)
Other	2 (1.4)
Income bracket	
Less than R72 000 annually up to R252 000 annually	53 (38.7)
R252 000 to R420 000 annually	54 (39.4)
R420 000 and above	30 (21.9)

Table 1 (Continued)

Frequencies and distributions of respondents' self-reported demographics

Demographic characteristics	Frequency (%)
Transport	
Walk	1 (0.7)
Personal vehicle	100 (73.0)
Carpool	17 (12.4)
Taxi	9 (6.6)
Bus	5 (3.6)
Train	3 (2.2)
Other	2 (1.5)
Travelling time between home and work	
11 to 20 min	32 (23.9)
21 to 30 min	42 (31.3)
41 to 50 min	33 (24.6)
Longer than 1 hour	27 (20.1)
Hours at work	
Half a day	7 (5.2)
Full day	66 (49.3)
9 to 12 hours	61 (45.5)
Hours spent on work at home	
None	66 (48.5)
Less than 2 hours	41 (30.1)
2 to 4 hours	14 (10.3)
5 to 7 hours	15 (11.0)

* Valid percentages were reported

4.4.2. Lifestyle habits of respondents

The EFA of lifestyle habits in the South African context extracted four factors, explaining a satisfactory 54% of the variance. The factors that were extracted produced an acceptable KMO value larger than 0.5 ($KMO = 0.69$), indicating significant correlations between items and an adequate sample size ($N = 157$) (Field, 2009). However, the two items “How often do you smoke cigarettes or a pipe” and “How often do you consume more than seven alcoholic drinks per week” did not fit the factor structure theoretically and constituted the majority of the fourth factor. The EFA performed, excluding these items, extracted three factors with a KMO of 0.70 and explained an acceptable 49.8% of the variation. Due to the importance of “not smoking” and “not drinking alcohol” as lifestyle habits, they were considered unique items with reversed mean values.

The three factors extracted from the EFA were named “Dedicated efforts”, “Food and sleep” and “Exercise and relaxation”. The CFA for these three factors showed that standardized regression weight estimates for lifestyle habits were above the ideal value of 0.3, except for

four of the estimates that ranged from 0.22 – 0.29. Although these four estimates were below 0.3, they were also regarded as being acceptable. The fit statistics for the CFA indicated that $CMIN/DF = 1.84$, the comparative fit index (CFI) = 0.87 and the root means square error of approximation (RMSEA) = 0.07 [90% confidence interval (CI) = 0.054-0.093]. Ideally, the chi-square statistic divided by degree of freedom (CMIN/DF) should be < 5 (Mueller, 1996), CFI ≥ 0.9 (Mueller, 1996), and RMSEA < 0.1 (Blunch, 2008). Since two of the three fit indices were good and the CFI was acceptable, the fit of the model is regarded as acceptable and confirms construct validity. Figure 1 (below) provides a visual representation of the CFA model. The Cronbach alpha values of all three factors confirmed acceptable internal reliability (Table 2), namely “Lifestyle Habits (LH) dedicated efforts” ($\alpha = 0.60$); “LH exercise and relaxation” ($\alpha = 0.67$); and “LH food and sleep” ($\alpha = 0.79$) (Table 2).

According to the mean factor scores, respondents tended to “sometimes to often” adhere to good “LH food and sleep” (mean = 3.27 ± 0.86). It is undeniable that the urban corporate setting is characterized by a fast-paced lifestyle, with consumers opting for more convenient meal options (Shridhar, 2020). However, healthy convenience meals (Brunner *et al.*, 2010) and functional foods have become a trend amongst consumers (Ali & Rahut, 2019). Although this study did not measure respondents’ purchase of convenience meals/ functional foods, it is possible that consumers from the urban corporate environment opt for healthy and convenient meal options available. The respondents within this study indicated that they only sometimes get adequate sleep in combination with healthy food-related habits, confirming the literature, which states that Generation Z and millennials have trouble sleeping (Shridhar, 2020).

Furthermore, respondents indicated that they adhered “seldom to sometimes” to “LH exercise and relaxation” (mean = 2.60 ± 0.67) and “sometimes” to “LH dedicated efforts” (mean = 2.99 ± 0.77), with the average score being centralized around 3 (1 = Never; 5 = Always). In the urban corporate setting, executive employees typically have a higher workload with excessive stress levels than lower-level employees (Thendo *et al.*, 2013). Therefore, executive-level employees may be less likely to engage in physical activity and dedicated health efforts than lower-level employees. Ultimately, this may cause our respondents to lean towards not engaging in “LH exercise and relaxation” and “dedicated efforts” as regularly as they should.

On average, respondents indicated that they “often” “do not use alcohol” (mean = 3.95 ± 1.2) and “do not smoke” (mean = 4.01 ± 1.43). Taking the above-mentioned mean factor scores into consideration, it appears that respondents from this urban corporate setting were aware of the benefits of adhering to healthy lifestyle habits by at least “sometimes to often” engaging in these habits. This adherence may be the result of this working environment requiring higher

levels of education and dedication, respondents not being smokers or wanting to adhere to healthy lifestyle habits.

Table 2: Descriptive statistics for lifestyle habit factors/unique items

Factors/Unique items	n	Minimum	Maximum	Mean factor scores	Standard deviation	Cronbach Alpha
Food and sleep	133	1.00	5.00	3.27	0.86	0.79
Dedicated efforts	131	1.33	4.67	2.99	0.77	0.60
Exercise and relaxation	131	1.00	4.17	2.60	0.67	0.67
Do not smoke [#]	131	1.00	5.00	4.01	1.43	-
Do not use alcohol [#]	131	1.00	5.00	3.95	1.20	-.1

[#] Individual items for which Cronbach Alpha is not applicable

*Lifestyle habit factors with a # are unique items rather than factors and, therefore, have mean values instead of mean factor scores, and they do not have Cronbach alpha values. *Missing values excluded*

4.4.3. Situational motivation of respondents

The SIMS of Guay *et al.* (2000) identified four subgroups; however, the EFA on our data in the South African context extracted only three factors, explaining 70% of the variance. Still, the factors were similar to those of Guay *et al.* (2000), with the third factor encompassing a combination of two of their factors. Therefore, the EFA was repeated with four factors, namely, “intrinsic motivation”, “identified regulation”, “amotivation”, and “extrinsic motivation”, which explained 74.47% of the variance. The factors extracted produced a good KMO value of 0.86.

In order to confirm that the four factors (“Intrinsic motivation”, “Identified regulation”, “Amotivation”, and “Extrinsic motivation”) extracted with the EFA align with the factors from the literature, we conducted a CFA with these four factors. The CFA for situational motivation showed that the estimated values for standardized regression weights were all above 0.46; thus, above the requirement of 0.3 and acceptable. Therefore, standard regression values indicated that all items were suitable for measuring the constructs for the study. This suitability shows the construct validity in this context as confirmed by the goodness of fit indices. The fit statistics for the CFA indicated CMIN/DF = 2.331, CFI = 0.878 and RMSEA = 0.092 [90% CI = 0.077-0.108]. Two of the three fit indices were good, and CFI could be considered acceptable; therefore, the goodness of fit of the model is confirmed, as is construct validity. Figure 2 provides a visual representation of the CFA model.

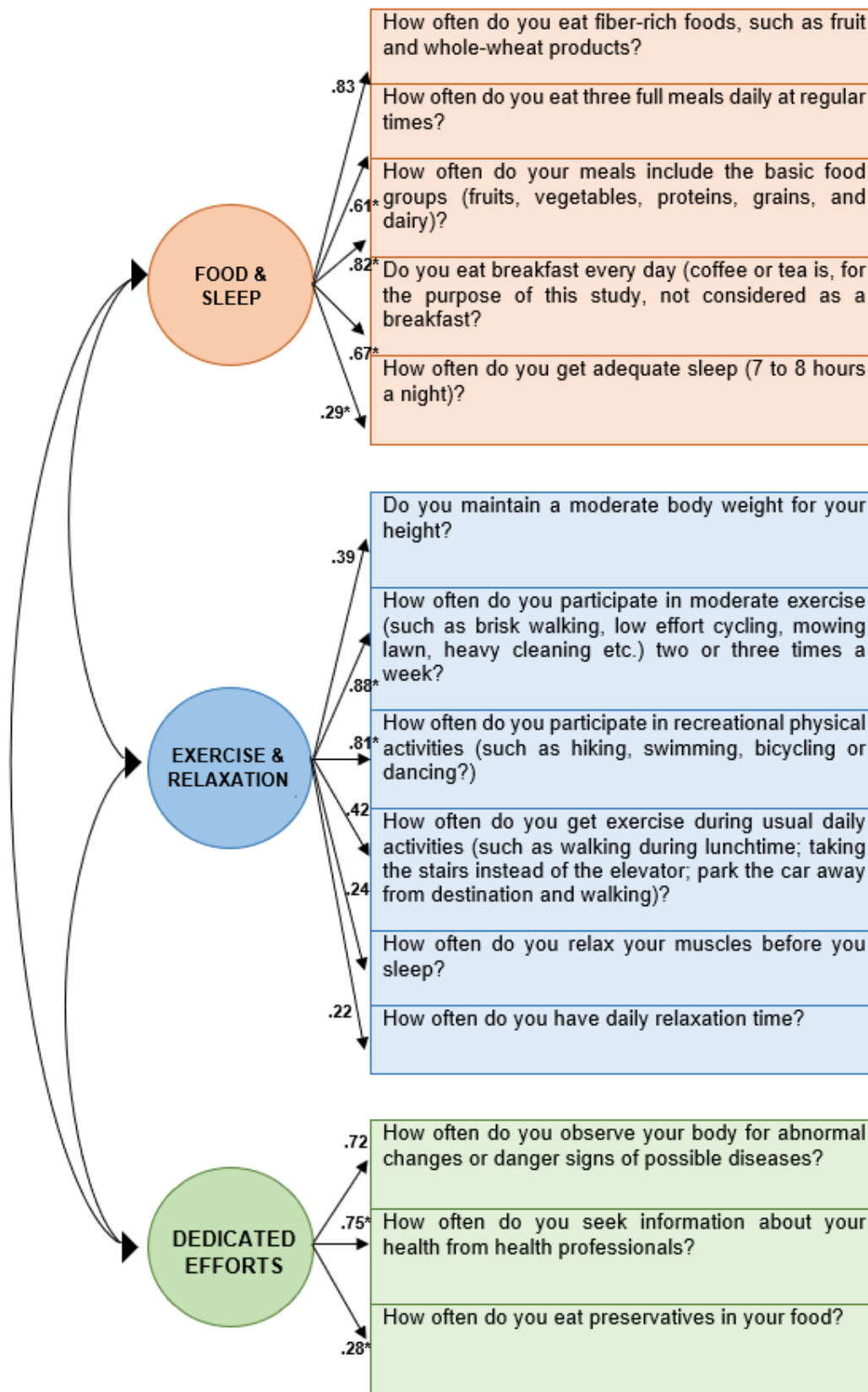


Figure 1: Confirmatory factor analysis model for healthy lifestyle habits

¹Most correlations were statistically significant, with (*P < 0.01).

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Exercise and relaxation	131	1.00	4.17	2.60	0.67	0.67
Do not smoke [#]	131	1.00	5.00	4.01	1.43	-
Do not use alcohol [#]	131	1.00	5.00	3.95	1.20	-. ¹

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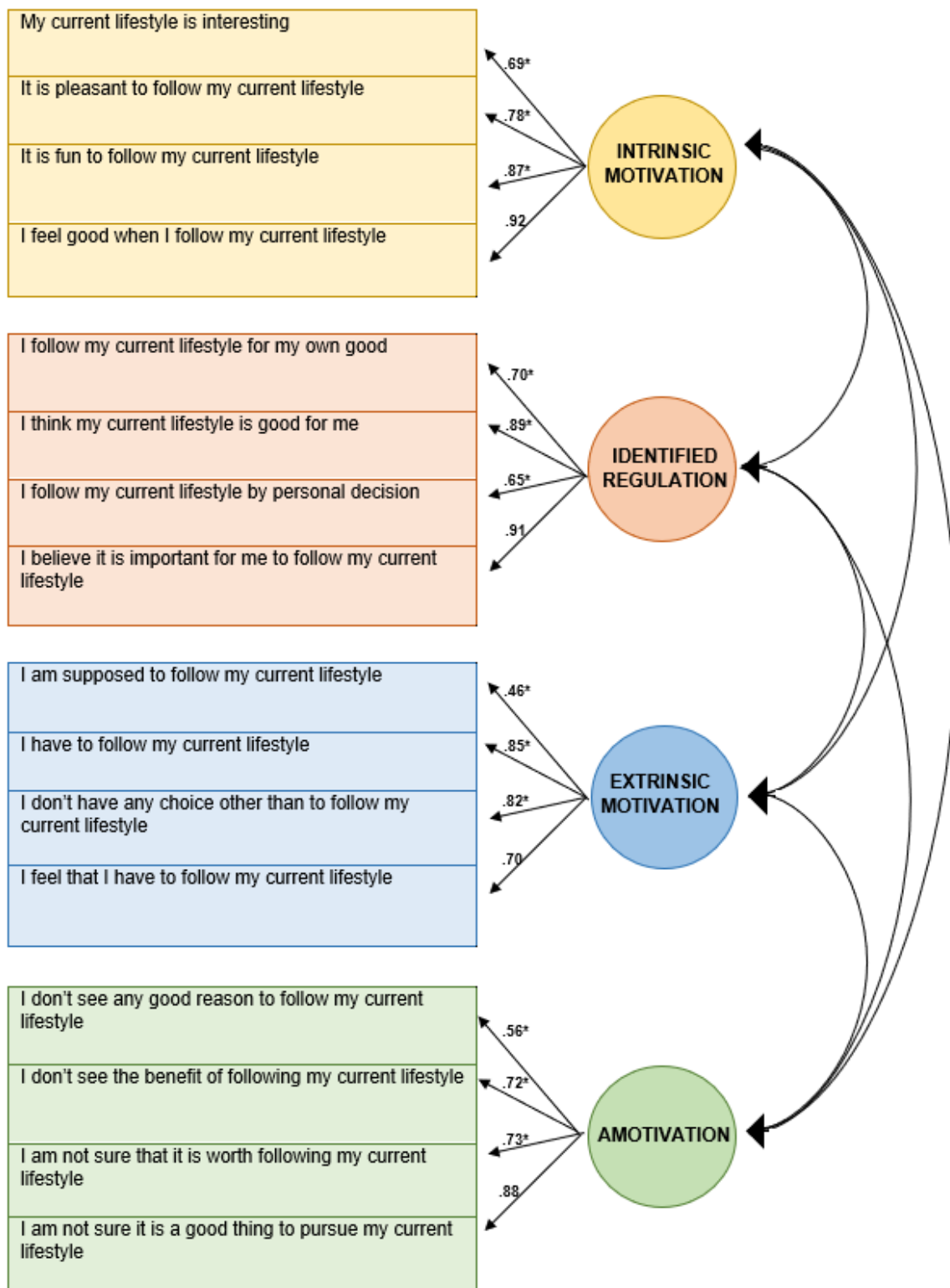


Figure 2: CFA model for situational motivation

Most correlations were statistically significant, with (*P < 0.01).

All four factors showed good internal reliability: “external motivation” ($\alpha = 0.79$); “amotivation” ($\alpha = 0.81$); “identified regulation” ($\alpha = 0.87$); and “internal motivation” ($\alpha = 0.88$) (Table 3).

For the factors “intrinsic motivation” (mean = 3.48 ± 0.85) and “identified regulation” (mean = 3.54 ± 0.86), respondents agreed to strongly agree on average that they regarded these situational motivations as the reasons for following their current lifestyle. Should consumers follow healthy lifestyle habits, their internal (intrinsic) motivation would be a result from their being challenged by and of feeling a sense of belonging and curiosity towards the benefits of maintaining a healthy lifestyle (Chen *et al.*, 2013). Furthermore, respondents in our study agreed that they voluntarily accepted the merits of healthy lifestyle behavior and valued the effect that it had on their personal well-being. The nature of the respondents’ motivation, therefore, was founded on internally regulated factors. In essence, this means that their will to achieve and maintain their current lifestyle was driven by their “internal motivation”. Furthermore, the results indicate that the nature of the respondents’ motivation is also characterized by their eagerness to follow a lifestyle that they, themselves, have chosen: in other words, “identified regulation”.

For “external motivation” (mean = 2.72 ± 0.85) and “amotivation” (mean = 2.45 ± 0.91), the mean scores resided below 3 (where 1 = strongly disagree; 5 = strongly agree), indicating that, on average, respondents tended to disagree with “external motivation” and “amotivation” being reasons for their following their current lifestyle (Table 3). Organizations tend to make use of health promotion programs and incentives (Seifert *et al.*, 2012) to attempt to motivate consumers to engage in healthy lifestyle habits. Consumers would then be motivated by these external factors because they felt obligated and not because it was an inner desire or personal goal to maintain healthy lifestyle habits. The lower agreement with “external motivation” and “amotivation” in our study indicates that the respondents were not primarily motivated by goals that they had not set themselves. Respondents were instead motivated by their own desires and personal goals and, ultimately, exhibited a lower level of “amotivation”, since not all of them desired to invest time and energy in the given task (Guay *et al.*, 2000; Howard *et al.*, 2016), in this case adhering to healthy lifestyle habits.

Respondents were on average motivated by the different situational motivation factors, including “internal and external motivation”, “identified regulation”, and “amotivation”, although not to the same extent. These findings align with literature showing that an inner desire for satisfaction (Guay *et al.*, 2000), external rewarding stimuli and avoiding adverse outcomes (Ryan & Deci, 2020), and personal achievement associated with adhering to a specific regulation/behavior (Guay *et al.*, 2000) may all motivate consumers. In addition, Guay *et al.* (2000) also highlight that positive outcomes are expected if a consumer’s motivational profile

consists of high levels of intrinsic motivation and identified regulation and low levels of amotivation and external regulation, as in the present study.

Table 3: Descriptive statistics of situational motivation factors

Factors	n	Minimum	Maximum	Mean	Standard deviation	Cronbach Alpha
Intrinsic motivation	103	1.00	5.00	3.48	0.85	0.88
Identified regulation	103	1.00	5.00	3.54	0.86	0.87
External motivation	103	1.00	5.00	2.72	0.85	0.79
Amotivation	102	1.00	5.00	2.45	0.91	0.81

**Missing values excluded*

4.4.4. Association of demographic variables with lifestyle habits and motivation

In this section, Spearman's rank-order correlation coefficients were used to examine associations with ordinal demographic characteristics, while t-tests and ANOVAs were used to examine associations with nominal demographic characteristics. Spearman's rank-order correlation coefficients showed only medium effect size correlations between ordinal demographic characteristics and lifestyle habits. Respondents' qualification levels showed a tendency for correlation with "LH exercise and relaxation" ($r = 0.22$), indicating that respondents who had higher education levels were more prone to exercise. Divine and Lepisto (2005) had similar findings. Respondents' qualification level also correlated with "LH food and sleep" ($r = 0.21$), implying that respondents with higher education levels tended to be more inclined to engage in healthy food consumption and sleep behaviors. Literature confirms that consumers make healthier food choices when equipped with adequate knowledge regarding the nutritional benefits of food (Bucher *et al.*, 2013). Although consumers' education level is not directly related to knowledge regarding nutritional benefits of food, it may enable them to better retrieve and understand this information.

Respondents' salary brackets tended to correlate with "LH food and sleep" ($r = 0.27$), "LH dedicated efforts" ($r = 0.25$), and "LH exercise and relaxation" ($r = 0.28$), which suggests that respondents with higher incomes had access to better food and sleep habits, and regular exercise. Higher incomes probably provided respondents with more opportunities to engage in dedicated efforts to improve their lifestyle. Supporting this statement, a study by Kim and So (2014) indicates that consumers in a higher income bracket tend to be more physically active than those who have a lower income. Consumers in higher salary brackets are likely to

be those with higher levels of education (Jansen van Rensburg, 2014). Divine and Lepisto (2005) state that consumers would be more successful in maintaining healthy lifestyles if they have higher levels of education.

The correlation between traveling and “LH not using alcohol” ($r = 0.21$) suggests that the more time respondents spent on traveling between work and home, the less likely they were to use alcohol. However, they were more likely to neglect following a healthy lifestyle concerning “LH food and sleep”, as confirmed by the negative correlation between travelling time and “LH food and sleep” ($r = -0.20$). There is agreement in the literature that long commutes influence consumers' adherence to healthy lifestyles in an urban corporate environment (Kawada & Suzuki, 2008).

The number of children of respondents tended to correlate negatively with “amotivation” ($r = -0.24$). This correlation could imply that respondents were most likely situationally motivated by their responsibility towards their children. This correlation could imply that respondents were most likely situationally motivated by their responsibility towards their children. Research by Maccoby (2010) states that consumers were more motivated when they had important responsibilities, which, in this study, may include their responsibility towards their children. On the other hand, stress at home showed a correlation with “amotivation” ($r = 0.27$), which supports the findings of a study by Ragins *et al.* (2014) showing that employees who experience stress at home exhibit adverse outcomes at work due to their lack of commitment and focus.

Respondents' qualification level also showed a medium negative correlation with “amotivation” ($r = -0.26$), thus the higher the “qualification level” of the respondents, the less likely they were to be “amotivated”. This tendency concurs with findings by Pincus and Callahan (1994). They found that education (i.e. qualification level) directly influenced self-control and autonomy, the latter of which, according to the SDT, relates to intrinsic and extrinsic motivation. In a similar vein, findings also showed a negative correlation between respondents' salary bracket and their “external motivation” ($r = -0.22$) and “amotivation” ($r = -0.25$), respectively. Therefore, respondents in a higher salary bracket were less likely to be motivated by external factors and would be “amotivated”.

T-tests showed that respondents who were not homeowners tended to be more (Cohen's $d = 0.40$) “amotivated” (mean = 2.67 ± 0.95) than respondents who owned a home (mean = 2.29 ± 0.85), corroborating findings on income and amotivation. These findings imply that homeowner and house residency factors contributed positively to dedicated and motivated behavior.

Females (mean = 4.20 ± 1.09) had a higher tendency not to use alcohol than males (mean = 3.49 ± 1.27), according to t-tests ($d = 0.56$). This tendency reiterates the findings from a study by Bowden *et al.* (2019) indicating that mothers (i.e. females) are less likely to exceed alcohol limits than fathers (i.e. males). However, males' (mean = 2.94 ± 0.75) "extrinsic motivation" tended to be higher than those of females (mean = 2.60 ± 0.89 ; $d = 0.39$).

Respondents who resided in an apartment (mean = 2.80 ± 0.72) showed a tendency to engage more in "LH exercise and relaxation" than respondents residing in a townhouse (mean = 2.48 ± 0.51 ; $d = 0.44$). However, those who resided in an apartment tended to be more "amotivated" (mean = 2.75 ± 1.05 ; $d = 0.40$) than respondents living in a house (mean = 2.33 ± 0.91 ; $d = 0.40$). From the response towards "LH exercise and relaxation," we can propose that respondents residing in an apartment used exercise as a means of escape from possible apartment space limitations. In contrast, respondents who resided in a townhouse seemed to experience more freedom and therefore did not experience the same need to escape. Given that respondents who resided in apartments also showed tendencies towards greater "amotivation", they probably did not engage in any exercise for the benefits associated with it or for pursuing a personal goal.

4.4.5. Associations between respondents' healthy lifestyle habits and motivation

Lifestyle habits of "dedicated efforts" ($r = 0.270$) and participating in "exercise and relaxation" ($r = 0.246$) correlated with "intrinsic motivation". Intrinsic motivation is fueled by personal satisfaction (Guay *et al.*, 2000) and challenging situations (Chen *et al.*, 2013). The above correlation confirms that respondents who relied on "intrinsic motivation" enjoyed the satisfaction of achieving their "LH exercising and relaxation" goals and were moreover motivated by the challenge of being dedicated to a specific way of life. Furthermore, the lifestyle habits of "LH dedicated efforts" ($r = 0.274$), "LH exercise and relaxation" ($r = 0.230$), and "LH not smoking" ($r = 0.277$) correlated with "identified regulation" as motivation. These correlations confirm that consumers who rely on "identified regulation" adopt certain behaviors that will ultimately benefit them in achieving a self-determined end goal (Guay *et al.*, 2000; Howard *et al.*, 2016). In this study, the end goal is a healthy lifestyle consisting of exercising, relaxation and dedicated efforts while steering away from detrimental behaviors such as smoking.

However, "extrinsic motivation" and "amotivation" showed no noteworthy correlations with healthy lifestyle habits, which concurs with literature stating that "extrinsic motivation" does not provide the necessary long-term motivation required to maintain healthy lifestyle habits (Onu *et al.*, 2019). Therefore, organizations should instead invest their resources in possible

solutions that focus on intrinsic motivation rather than external stimuli. As for “amotivation”, a lack of control over a situation may cause respondents to distance themselves from healthy lifestyle habits, while the opposite, when respondents blindly participate in healthy lifestyle habits, may cause them to follow these lifestyle habits without any cause or dedication (Howard *et al.*, 2016). These findings conclude that SDT is applicable since the findings indicate that motivation contributes to consumer’s healthy lifestyle habits.

4.5. LIMITATIONS

A limitation is that the distribution of respondents’ ethnicities, income level, gender, education, and geographical aspects was not equal. Another limitation was the exclusion of potential respondents due to the inclusion and exclusion criteria that were implemented for this study. Furthermore, healthy lifestyle habits on the scale of Belloc and Breslow (1972), supplemented by that of Walker *et al.* (1995), were used in a broad context. They, therefore, did not include some aspects of healthy lifestyle habits that may influence overall consumer well-being. The inclusion of healthy lifestyle habit indices such as respondents’ 1) time spent on electronic devices; 2) consumption of dietary supplements; 3) consumption of caffeine as part of their diet; and 4) seeking help from health professionals regarding mental health may broaden the researcher’s understanding of other internal and external influences that may affect consumers’ healthy lifestyle habits.

4.6. CONCLUSION

This research established a baseline for consumers' healthy lifestyle habits and associated situational motivations in an urban corporate setting, with valuable implications for addressing the physical well-being of consumers in such a setting and the potential of expanding the findings to other communities upon further research. The demographic of this study mostly consisted of full time employees that were highly educated, younger, middle-income respondents living in smaller households. The respondents tended to adhere to average to good, healthy lifestyle habits, despite the challenges faced in a typical urban corporate environment. The findings revealed that respondents strongly agreed that internal (intrinsic) motivation and identified regulation were the main contributing situational motivations for them to follow their current lifestyle. Consumers who relied on internally regulated motivations were, in the context of this study, more likely to pursue healthy lifestyle habits. However, externally fuelled situational motivations proved to have no associations with healthy lifestyle habits. The implementation of programs in the corporate setting could improve the health of employees in the long run. If the environment is conducive to and secures a safe and healthy working

environment, it may result in external motivation that can be transformed into internal motivation. These motivations could positively impact the health of employees, which would contribute to a healthy working environment. From this study, employers will be able to understand how their employees are motivated to follow healthy lifestyle habits. Employers can use this to their advantage in that improved employee well-being will increase the overall productivity of their employees.

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CHAPTER 5

GENERAL DISCUSSION AND CONCLUSIONS

5.1. INTRODUCTION

For this study, a quantitative, descriptive, and cross-sectional survey design was employed using an online questionnaire. The study aimed to describe the healthy lifestyle habits and situational motivations to follow these habits amongst consumers in a South African urban corporate setting. The Situational Motivation Scale (SIMS) (Guay *et al.*, 2000:210) was used as the theoretical approach and measuring instrument to determine consumers' direct responses towards activities they engage in: in this case, lifestyle habits. The study intended to address the apparent gap in current literature by providing valuable insights into the lifestyle habits of South African urban corporate consumers in terms of their health and, furthermore, the situational motivations that encourage them to pursue these habits. Inherently, healthy lifestyle habits and their underlying motivations are of great concern to both consumers in an urban corporate setting, to the extent that it influences their overall well-being; and employers, in how it affects their employees' productivity. This chapter will provide a summary of the main findings as well as a discussion of the conclusions, limitations, recommendations and implications.

5.2. CONCLUSIONS

5.2.1. Conclusions based on the literature review

Consumers, particularly in an urban corporate setting, are challenged with various health concerns. The literature emphasises two aspects of considerable concern that affect consumers' physical well-being in the modern urbanised society, namely health and lifestyle habits. Belloc and Breslow's (1972:46-64) healthy lifestyle habits, supplemented with related questions from the Lifestyle Profile II questionnaire (Walker *et al.*, 1995), were used to address these health aspects. Consumer motivation is also an important driving factor within consumer science and behaviour and, therefore, has been researched extensively.

As this study intended to understand and describe the extent to which consumers are motivated to partake in healthy lifestyle habits, a slightly adapted version of the SIMS scale of Guay *et al.* (2000:210) was used. This scale comprises five situational motivation constructs, namely: 1) intrinsic motivation, 2) extrinsic motivation, 3) identified regulation, 4) external regulation, and 5) amotivation. Self-determination theory (SDT) has also been used as part of

the theoretical foundation of this study (which entails autonomy, competence, and relatedness) to identify the motivations behind the behavioural patterns of consumers.

Demographic characteristics (such as age, income, and level of education) proved to significantly affect consumers' motivations and their reasons for following their current lifestyle habits. Employees within an urban corporate setting are typically from different generational, income, education, and cultural groups. In order to create a working environment where all employees feel inspired and productive, employers should take into account the generational differences in the workplace and construct a work environment to be conducive to all.

Globally, unhealthy lifestyle habits have become increasingly prevalent due to an inevitable shift in consumers' lifestyles caused by rapid urbanisation and changing work environments. Although not prevalent amongst the respondents from this study's sample, non-communicable diseases (NCDs) have proliferated, especially in low- and middle-income countries. Businesses generally attempt to improve their employees' lifestyle habits by motivating them to partake in wellness programmes, with the expectation that it may reduce the risk of their developing NCDs (Grové & Wilders, 2009:46). Businesses often rely on external motivation in the form of, for example, incentives as a driving force. However, in the long term, external motivation is less effective than internal motivation. Therefore, businesses should instead focus on internal motivation until employees' behaviour becomes self-sustainable (Berry *et al.*, 2010:2; Seifert *et al.*, 2012:5).

It is clear from the literature that healthy lifestyle habits are essential to the overall well-being of consumers. However, consumers seem to be unaware of the effect that the urban corporate environment may have on their lifestyle habits. Additionally, there is not enough research to describe how different demographic characteristics influence consumers' motivation and lifestyle habits. Supplementary research could help employers develop effective means to motivate consumers (employees) within the urban corporate environment. This research could also be used to design wellness programmes with a lasting effect on consumers' health.

5.2.2. Empirically based conclusions

5.2.2.1. Demographic characteristics of respondents

The study comprised a multitude of ethnicities in South Africa, including white (47.9%); black (22.5%); coloured (10.6%); and Asian, Indian and other (19%) respondents. The majority of the respondents were aged between 18 and 34 years (47.7%) and they were predominantly female (67%). The demographic profile further highlighted that the respondents were highly educated – (72.2%) had a post-high school qualification – whilst slightly less than half (45.5%)

reported that English was their preferred language. The annual income of the majority of the respondents was below R420 000. Respondents from this study were typically homeowners (61.7%), while (63.1%) reported that they resided in a house. Households with children slightly outnumbered those without any children, although most had fewer than two children. Furthermore, slightly more than half of the respondents spent between 11 and 30 minutes or less on commuting between work and home, while the majority (94.8%) worked a full day or between 9 and 12 hours. In summary, the sample used in this study included highly educated, younger, middle-income respondents with full-time jobs who came from smaller households.

5.2.2.2. Healthy lifestyle habits of respondents

The results showed that, overall, the respondents tended to adhere to average to good, healthy lifestyle habits. Despite the challenges faced in a typical urban corporate environment (such as long and irregular working hours, workplace stress, skipping of meals and extensive commutes between the office and home) (Thendo *et al.*, 2013:999; Mazzola *et al.*, 2017:483), respondents reported that they sometimes to often adhered to good lifestyle habits regarding healthy *food and sleep* behaviours. These seemingly healthy behaviours of the respondents may positively influence their overall health. Sleep habits have been shown to affect performance in the work environment (Richer, 2018:17).

In general, respondents also reported average participation in healthy lifestyle habits, including exercise, relaxation, and dedicated efforts, which is essential to achieve meaningful health outcomes. The reported healthy lifestyle habits regarding *exercise and relaxation* revealed that the respondents might be struggling to find a balance between work, physical activity, and relaxation. Also, respondents seldom adhered to lifestyle habits concerning *dedicated efforts*, indicating that they neglected to seek and apply vital information regarding preventative health-related behaviours requiring dedication to their health. It is possible that the respondents, of which the majority are of a younger age (18-34 years), are healthier and therefore may not see the need to seek information regarding their health. Respondents' lack of exercise and dedicated efforts highlights the need for the further development of wellness programmes that promote lasting healthy lifestyle habits.

Surprisingly, in the light of the higher stress levels accompanying the urban corporate work setting, the respondents generally did not partake in unhealthy lifestyle habits such as the over-consumption of alcohol or smoking. These findings could be due to the majority of the sample comprising Millennials and Generation Z, which are characterised as well educated, value health and wellness, and maintain a healthy weight and keep physically fit and strong (Shridhar, 2020:8). Being well educated, they may be aware of the possible negative effect

that their sedentary behaviour has on their well-being and that this may motivate them to steer clear from smoking and drinking. The findings mentioned above regarding healthy lifestyle habits indicate that the respondents were more or less aware of the benefits that a healthy lifestyle has to offer, which is most likely the reason why they maintain healthy lifestyle habits to some extent. The respondents' overall positive response towards engaging in healthy lifestyle habits might be a result of their organisation proactively promoting healthy lifestyle habits through corporate wellness programmes focussing on internally motivating their employees. The information obtained from this research creates a better understanding of these respondents' healthy lifestyle habits in a typical urban corporate setting, which is of value to employers that may require further assistance in promoting wellness in the workplace.

5.2.2.3. Situational motivations for respondents to pursue healthy lifestyle habits

The findings revealed that respondents strongly agreed that internal (intrinsic) motivation and identified regulation were the main contributing situational motivations for them following their current lifestyle. Their strong agreement may point to respondents' inner desire to accomplish a specific goal (Guay *et al.*, 2000:177), which may include following a healthy lifestyle, or to respondents valuing the benefits (Teixeira *et al.*, 2012:2) that may be associated with choosing healthy lifestyle habits as part of their everyday lives. The respondents also agreed to a somewhat lesser degree that external motivation and amotivation influenced their current lifestyle. Some respondents might be externally motivated through the rewards associated with wellness programmes and not necessarily by the accompanying personal health benefits. The prevalence of amotivation among some of the respondents indicates that they experienced deficient levels of motivation and lacked the desire to invest time and energy in engaging in healthy lifestyle habits.

These findings regarding respondents' situational motivation contribute to the literature on lifestyle habits by showing that consumers partaking in this study were more likely to be driven by their personal goals and desires than by external stimuli such as rewards or incentives. From these findings, it would seem that wellness programmes, despite usually being based on external motivational incentives, were effective in supporting internal motivations among respondents. The study should enhance awareness among employers that their employees (especially those from the urban corporate setting examined in this study) are motivated through intrinsic motivation and identified regulation. Ultimately, these employers are provided with knowledge regarding motivation that may help them improve the productivity levels and dedication of their workforce.

5.2.2.4. Associations between healthy lifestyle habits and respondents' motivations

The study yielded multiple correlations between situational motivational factors and healthy lifestyle habits with medium effect sizes, suggesting that situational motivational factors tend to relate to healthy lifestyle habits. These relationships are denoted as positive or negative, where an increase in the value of one positive variable may result in an increase in the other. In contrast, a negative correlation suggests that an increase in one variable is associated with a decrease in the other.

The findings indicated positive correlations between intrinsic (internal) motivations and healthy lifestyle habits, including “LH exercise” and “LH dedicated efforts”. These correlations suggest that as respondents’ internal motivations intensify, their likelihood of engaging in healthy lifestyle habits also increases. Efforts to assist respondents in increasing their internal motivation may further drive these respondents to engage in these habits and successfully maintain a healthy lifestyle. Correlations were also revealed between identified regulation and healthy lifestyle habits, including “LH dedicated efforts”, “LH exercise” and “LH non-smoker”. These correlations indicate that the greater the self-determined desire of respondents from this study to engage in healthy lifestyle habits as beneficial to their health, the more they engaged in positive habits related to personal dedication, including exercising and abstaining from smoking.

The significant manifestation of associations between internally regulated situational motivations and healthy lifestyle habits shows that consumers who relied on internally regulated motivations were, in the context of this study, more likely to pursue healthy lifestyle habits. However, externally fuelled situational motivations proved to have no associations with healthy lifestyle habits, which indicates that stronger externally driven motivations did not necessarily concur with meaningfully higher engagement in healthy lifestyle habits.

5.2.2.5. Associations between demographic variables and healthy lifestyle habits and motivations among respondents

The results yielded correlations that describe the relationships that demographic variables had with healthy lifestyle habits and motivations among respondents. Meaningful correlations to consider were those of respondents’ educational level with “LH exercise and relaxation” and “LH food and sleep” and their salary bracket with “LH food and sleep”, “LH dedicated efforts” and “LH exercise and relaxation”. These correlations suggest that more educated respondents with possibly higher incomes tended to exercise more regularly and were more likely to adhere to healthy food and sleep habits than those who were less educated. Additionally, the

correlation between respondents in a higher salary bracket and dedicated efforts showed that they might have had more resources and opportunities to adhere to better lifestyle habits than their lower-income counterparts. Two other correlations concerning healthy lifestyle habits that were important in this study were respondents' increased tendency not to use alcohol and, secondly, their reluctance to adhere to good food and sleep behaviours as their travelling time increased. Therefore, both positive and negative lifestyle habit outcomes were associated with increased travel time.

Respondents were less likely to be amotivated as the number of children they had increased and if they had a higher level of education and salary. Conversely, more stress at home may have increased the prevalence of amotivation amongst these respondents. Lastly, there was a negative correlation between respondents' salary brackets and external motivations, implying that respondents in a higher salary bracket were motivated by external factors to a lesser extent than those with lower incomes. Thus, employees in lower brackets may benefit more from rewards.

5.3. LIMITATIONS AND RECOMMENDATIONS

Limitations of this study include that the findings are not intended for generalisation to all consumers at corporate institutions due to the convenience sampling method used. Nevertheless, the study yielded a fundamental understanding of the motivations and lifestyle habits of the respondents, all of whom were employees in a South African urban corporate setting. An addition to the study that would allow for a broader application of the results derived from it would be valuable. A more wide-ranging study of consumers' demographic characteristics such as ethnicities, income, gender, level of education, and geographical aspects is recommended for follow-up research.

The inclusion and exclusion criteria, though valuable for the present study, automatically excluded certain potential respondents. The results are, therefore, applicable only within the boundaries of these criteria and sampling. Healthy lifestyle habits on the scale of Belloc and Breslow (1972:46-64), supplemented by Walker *et al.* (1995), were used in a broad context. Therefore, they did not include some aspects of healthy lifestyle habits that may influence overall consumer well-being. The inclusion of healthy lifestyle habit indices such as 1) time spent on electronic devices; 2) the consumption of dietary supplements; 3) the consumption of caffeine as part of respondents' diet; and 4) seeking help from health professionals regarding mental health may broaden the researcher's understanding of other internal and external influences that may affect consumers' healthy lifestyle habits.

An additional recommendation is that a broader spectrum of consumers can be approached to include consumers who have restricted access to computers and the internet. The questionnaire could furthermore be availed in multiple languages to lessen the limitations initially placed on the sample. Also, as this study specifically focused on consumers in an urban corporate setting, a recommendation for future research would be to investigate consumers' healthy lifestyle habits and motivations in different environments. Finally, using focus groups in future research could help determine the drivers of consumers' healthy lifestyle habits and their motivations to follow and maintain these healthy lifestyle habits.

5.4. IMPLICATIONS

This study's results contribute to the discipline of consumer sciences by providing a better understanding of consumers' healthy lifestyle habits in an urban corporate setting and their motivations to follow these healthy lifestyle habits. The results obtained from this study may guide consumer scientists to focus on the healthy lifestyle habits that require attention, i.e. exercise, relaxation, and dedicated efforts, when addressing consumers' needs in this context. The findings further hint at internally regulated motivations being most effective for this group of respondents, even more so for respondents in a higher income bracket. Thus, this study can be beneficial to consumer scientists and health professionals alike, since specific wellness programmes that focus on improving the healthy lifestyle habits and effective motivation of employees in an urban corporate setting can be developed from a consumer education perspective.

The findings from this study may furthermore have an invaluable impact on the respondents and employers involved in the present study and those in similar environments. Feedback on the general findings should provide the implicated stakeholders with valuable knowledge and awareness regarding the different *situational motivations* that influence consumers' lifestyle habits. It also warrants mention that the findings narrowed down the situational motivational factors to intrinsic motivation and identified regulation. Should the corporate sector wish to develop wellness programmes with a lasting effect on the health of their employees, they should focus on these specific situational motivational factors.

The baseline findings in this underexplored field of research can guide employers in urban corporate settings about employees' *healthy lifestyle habits* and accompanying motivations. Respondents only sometimes adhered to beneficial lifestyle habits, including dedicated efforts, exercise and relaxation. It is foreseen that if the corporate sector should implement wellness programmes that focus on promoting these lifestyle habits, it may lead to meaningful health outcomes.

Finally, this study contributed to consumer sciences by identifying the healthy lifestyle habits and associated motivations of consumers within a South African urban corporate setting. The study also provided insights into the specific situational motivations associated with improving and maintaining healthy lifestyle habits that may promote overall well-being.

5.5. FINAL CONCLUSION

This study yielded valuable results pertaining to the lifestyle habits that South African urban corporate consumers follow in terms of their health, and the situational motivations that encourage them to maintain these lifestyle habits. The findings showed correlations with medium effect sizes between situational motivational factors and healthy lifestyle habits. These correlations indicated that those respondents who engaged in healthy lifestyle habits (such as exercise, food and sleep and dedicated efforts) were mainly also highly internally motivated to do so. However, respondents who were highly motivated by external factors did not regard healthy lifestyle habits as an important personal goal. Finally, it can be concluded that it is important for urban corporate organisations to understand how to develop wellness programmes that effectively motivate employees to engage in healthy lifestyle habits with a lasting effect on their health.

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ADDENDUM A: QUESTIONNAIRE FROM ORIGINAL STUDY

The original questionnaire is presented below with the relevant questions for this affiliated study highlighted/ blocked in green.



1. How old are you?

1. 18-24 years
2. 25-34 years
3. 35-44 years
4. 45-54 years
5. 55-64 years
6. 65-75 years
7. Older than 75 years

2. What is your gender?

1. Male
2. Female

3. How many children do you have?

1. None
2. 1
3. 2
4. 3
5. 4
6. 5
7. 6
8. More than 6

4. How many children of the following ages are living in your home?

None	☐
Infant (newborn to 12 months)	☐
Toddler (13 months to 4 years)	☐
Pre-school (4 years to 6 years)	☐
Primary School	☐
High School	☐

18 to 25 years	☐
Older than 25 years	☐

5. What is your highest qualification?

1. Less than grade 10
2. Grade 10
3. Less than grade 12
4. Grade 12
5. Diploma requiring less than 3 years of study
6. Degree/Diploma requiring 3 to 4 years of study
7. Post-graduate

6. What is your race?

1. White
2. Black
3. Coloured
4. Asian
5. Indian
6. Other _____

7. What is your religion?

1. Christianity
2. African traditional religion
3. Islam
4. Hinduism
5. Judaism
6. No religion
7. Other _____

8. What is your first language?

1. Afrikaans
2. English
3. IsiNdebele
4. IsiXhosa
5. IsiZulu
6. Sesotho sa Leboa
7. Sesotho
8. Setswana
9. SiSwati
10. Tshivenda
11. Xitsonga
12. Other _____

9. To what extent do you consider yourself 'traditional' according to your culture (religion/ language / traditional dress and habits)?

1. Not at all
2. Moderately
3. Extremely

10. Are you a home owner?

1. Yes
2. No

11. In what type of residence do you live?

1. House
2. Town house
3. Apartment / flat
4. Informal housing
5. Room in house
6. Other

12. What is your occupation?

13. How long have you been employed by FNB?

1. Less than 6 months
2. 6 to 12 months
3. 13 to 18 months
4. 19 to 24 months
5. 2 to 5 years
6. Longer than 5 years

14. In which salary bracket does your income fall?

1. A (less than R72 000 annually)
2. B (R72 001 - R144 000 annually)
3. C (R144 001 - R252 000 annually)
4. D (R252 001 - R420 000 annually)
5. E (R420 001 - R600 000 annually)
6. F (R600 001 - R960 000 annually)
7. G (R960 001 - R1 200 000 annually)
8. H (R1 200 001 - R1 800 000 annually)

9. I (more than R1 800 000 annually)

15. What type of primary transport do you make use of?

1. Private: Walk
2. Private: Bicycle
3. Private: Personal vehicle
4. Private: Car pool
5. Public: Taxi
6. Public: Bus
7. Public: Train
8. Other _____

16. Is your primary office based at your home?

1. Yes
2. No

17. How far do you live from work?

1. Less than 1km
2. 1 to 5km
3. 6 to 10km
4. 11 to 20km
5. 21 to 30km
6. 31 to 40km
7. 41 to 50km
8. More than 51km

18. How long does it take you to travel between home and work?

1. Less than 10min
2. 11 to 20min
3. 21 to 30min
4. 31 to 40min
5. 41 to 50min
6. 51 to 60min
7. Longer than 1 hour

19. How many hours per day, on average, do you spend at work?

1. Less than half a day
2. Half a day
3. Full day
4. 9 to 12 hours
5. 13 to 16 hours
6. More than 16 hours

20. How many hours per day, on average, do you spend on work, at home?

1. None
2. Less than 2 hours
3. 2 to 4 hours
4. 5 to 7 hours
5. 8 to 10 hours
6. More than 10 hours

21. How much stress do you experience in the following environments? (0=no stress)

	0	1	2	3	4	5	6	7	8	9	10
At home	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
At work	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Travelling between home and work	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

22. How often do you do the following?

	1 Never	2 Seldom	3 Sometimes	4 Often	5 Always
How often do you eat three full meals daily at regular times?	☐	☐	☐	☐	☐
How often do your meals include the basic food groups (fruits, vegetables, proteins, grains, and dairy)?	☐	☐	☐	☐	☐
Do you eat breakfast every day (Coffee or tea is, for the purpose of this study, not considered as a breakfast)?	☐	☐	☐	☐	☐
How often do you eat fibre-rich foods, such as fruit and whole-wheat products?	☐	☐	☐	☐	☐
How often do you eat preservatives in your food?	☐	☐	☐	☐	☐
How often do you participate in moderate exercise (such as brisk walking, low effort cycling, mowing lawn, heavy cleaning etc.) two or three times a week?	☐	☐	☐	☐	☐
How often do you participate in recreational physical activities (such as hiking, swimming, bicycling or dancing)?	☐	☐	☐	☐	☐
How often do you get exercise during usual daily activities (such as walking during lunchtime; taking the stairs instead of the elevator; park the car away from destination and walking)?	☐	☐	☐	☐	☐
How often do you get adequate sleep (7 to 8 hours a night)?	☐	☐	☐	☐	☐
How often do you relax your muscles before you sleep?	☐	☐	☐	☐	☐
How often do you have daily relaxation time?	☐	☐	☐	☐	☐
How often do you smoke cigarettes or pipe?	☐	☐	☐	☐	☐

Do you maintain a moderate body weight for your height?	☐	☐	☐	☐	☐
How often do you observe your body for abnormal changes or danger signs of possible diseases?	☐	☐	☐	☐	☐
How often do you seek information about your health from health professionals?	☐	☐	☐	☐	☐
How often do you consume more than 7 alcoholic drinks per week?	☐	☐	☐	☐	☐

23. To which extent do these statements serve as a guiding principle in your life?

	1 Not important at all	2 Of little importance	3 Somewhat important	4 Important	5 Extremely important
Equality (equal opportunity for all)	☐	☐	☐	☐	☐
Inner harmony (at peace with myself)	☐	☐	☐	☐	☐
Social power (control over others, dominance)	☐	☐	☐	☐	☐
Pleasure (gratification of desires)	☐	☐	☐	☐	☐
Freedom (freedom of action and thought)	☐	☐	☐	☐	☐
A spiritual life (emphasis on spiritual, not material matters)	☐	☐	☐	☐	☐
Sense of belonging (feeling that others care about me)	☐	☐	☐	☐	☐
Social order (stability of society)	☐	☐	☐	☐	☐
An exciting life (stimulating experiences)	☐	☐	☐	☐	☐
Meaning in life (a purpose in life)	☐	☐	☐	☐	☐
Politeness (courtesy, good manners)	☐	☐	☐	☐	☐
Wealth (material possessions, money)	☐	☐	☐	☐	☐
National security (protection of my nation from enemies)	☐	☐	☐	☐	☐
Self-respect (belief in one's own worth)	☐	☐	☐	☐	☐
Returning of favours (to repay favours; avoidance of indebtedness)	☐	☐	☐	☐	☐
Creativity (uniqueness, imagination)	☐	☐	☐	☐	☐
A world at peace (free of war and conflict)	☐	☐	☐	☐	☐
Respect for tradition (preservation of time-honoured customs)	☐	☐	☐	☐	☐
Mature love (deep emotional and spiritual intimacy)	☐	☐	☐	☐	☐
Self-discipline (self-restraint, resistance to temptation)	☐	☐	☐	☐	☐
Detachment (from worldly concerns)	☐	☐	☐	☐	☐

24. To which extent do the following statements describe the reasons you follow your current lifestyle (lifestyle refers to eating, sleeping and exercise habits, smoking and alcohol consumption)?

	1 Strongly disagree	2 Disagree	3 Tend to agree	4 Agree	5 Strongly agree
My current lifestyle is interesting	☐	☐	☐	☐	☐
I follow my current lifestyle for my own good	☐	☐	☐	☐	☐
I am supposed to follow my current lifestyle	☐	☐	☐	☐	☐
I don't see any good reasons to follow my current lifestyle	☐	☐	☐	☐	☐
It is pleasant to follow my current lifestyle	☐	☐	☐	☐	☐
I think my current lifestyle is good for me	☐	☐	☐	☐	☐
I have to follow my current lifestyle	☐	☐	☐	☐	☐
I don't have any choice other than to follow my current lifestyle	☐	☐	☐	☐	☐
I don't see the benefit of following my current lifestyle	☐	☐	☐	☐	☐
I feel that I have to follow my current lifestyle	☐	☐	☐	☐	☐
I am not sure it is a good thing to pursue my current lifestyle	☐	☐	☐	☐	☐
I feel good when following my current lifestyle	☐	☐	☐	☐	☐
I believe it is important for me to follow my current lifestyle	☐	☐	☐	☐	☐
I'm not sure that it is worth following my current lifestyle	☐	☐	☐	☐	☐
It is fun to follow my current lifestyle	☐	☐	☐	☐	☐
I follow my current lifestyle by personal decision	☐	☐	☐	☐	☐

25. To which extent do you agree with the following statements about yourself? COMPARED TO AN AVERAGE PERSON, I KNOW A LOT ABOUT...

	1 Strongly disagree	2 Disagree	3 Tend to agree	4 Agree	5 Strongly agree
Benefits of a healthy lifestyle	☐	☐	☐	☐	☐
Healthy lifestyle habits	☐	☐	☐	☐	☐
Non-communicable diseases (e.g. diabetes, hypertension)	☐	☐	☐	☐	☐
Healthy foods	☐	☐	☐	☐	☐
Supplements	☐	☐	☐	☐	☐
Active lifestyle clothing	☐	☐	☐	☐	☐

26. To which extent do you agree with the following statements about yourself? I KNOW A LOT ABOUT HOW TO EVALUATE THE QUALITY OF...

	1 Strongly disagree	2 Disagree	3 Tend to agree	4 Agree	5 Strongly agree
Healthy food	☐	☐	☐	☐	☐
Supplements	☐	☐	☐	☐	☐
Active lifestyle clothing	☐	☐	☐	☐	☐

27. To which extent do you agree with the following statements about yourself? PEOPLE WHO KNOW ME, CONSIDER ME AS AN EXPERT IN THE FIELD OF...

	1 Strongly disagree	2 Disagree	3 Tend to agree	4 Agree	5 Strongly agree
Benefits of a healthy lifestyle	☐	☐	☐	☐	☐
Healthy lifestyle habits	☐	☐	☐	☐	☐
Non-communicable diseases (e.g. diabetes, hypertension)	☐	☐	☐	☐	☐
Healthy foods	☐	☐	☐	☐	☐
Supplements	☐	☐	☐	☐	☐
Active lifestyle clothing	☐	☐	☐	☐	☐

28. Which statement about smoking cigarettes is TRUE? SELECT ALL THE CORRECT ANSWERS.

1. Smoking ≤ 3 cigarettes per day does not have a negative effect on one's health
2. Smoking cigarettes for ≤ 1 year does not result in permanent health damage
3. Smoking cigarettes would increase one's risk for obtaining cancer

29. Which statement about alcohol intake is TRUE? SELECT ALL THE CORRECT ANSWERS.

1. Compared to drinking hard liquor, e.g. brandy, drinking wine is less detrimental to one's health
2. Drinking 2 glasses of wine per day is acceptable
3. Using alcohol on a daily basis is likely to cause weight gain
4. Using alcohol assists a person to gain control over a situation

30. Which statement about supplements is TRUE? SELECT ALL THE CORRECT ANSWERS.

1. Supplements may contain growth promoting hormones (steroids), without it being indicated on the packaging
2. All supplements contain 100% natural ingredients

3. Some supplements may contain traces of heavy metals

31. Which statement about supplements is TRUE? SELECT ALL THE CORRECT ANSWERS.

1. The use of supplements can improve overall health and fitness
2. Some supplements can be used to treat signs and symptoms of colds
3. Some supplements can also be viewed as multi-vitamins

32. Which statement about supplements is TRUE? SELECT ALL THE CORRECT ANSWERS.

1. Some supplements may be used to prevent nutritional deficiency
2. Muscle weight can only be gained with the use of supplementation
3. Supplements do not contain amino-acids
4. It is only possible to lose weight if a diet-supplement is used

33. Which statement about lifestyle and nutrition is TRUE? SELECT ALL THE CORRECT ANSWERS.

1. There is no need to be physically active, if a person eats a healthy diet
2. One should drink 6 – 8 glasses of clean water per day to maintain a healthy lifestyle
3. Even eating small amounts of starches can cause weight gain
4. Eating breakfast is not essential, as long as one eats a balanced lunch

34. Which statement about nutrition is TRUE? SELECT ALL THE CORRECT ANSWERS.

1. Eating at fast food restaurants less than three times per week is acceptable to maintain a healthy lifestyle
2. Some types of dietary fibre (such as oats) lowers blood cholesterol
3. Excluding all sugar from one's diet will help me keep healthy
4. Replacing sugar with sugar replacements, e.g. Canderall, is a better health choice

35. Which statement about nutrition is TRUE? SELECT ALL THE CORRECT ANSWERS.

1. Trans-fats (fats found in processed food) are healthier than saturated fats (animal fats)
2. It is impossible to get all of the vitamins and minerals you need from food, therefore one needs to take vitamin and mineral supplementation
3. Most of the cholesterol in an egg is in the yellow part of the egg

36. Which statement about nutrition is TRUE? SELECT ALL THE CORRECT ANSWERS.

1. Fish, chicken without skin, and lean meat may help to prevent obesity related diseases
2. Polyunsaturated fats are healthier for the heart than saturated fats
3. The type of food a pregnant woman eats during pregnancy has no effect on the health of her unborn baby
4. The type of food a woman eats during breast feeding has no effect on the health of

her baby

37. Which statement about nutrition is TRUE? SELECT ALL THE CORRECT ANSWERS.

1. HDL refers to 'good' cholesterol, and LDL refers to 'bad' cholesterol
2. Eating only vegetables provides sustained energy for the day
3. It is acceptable to only eat two meals per day, if a person is not home during lunch time
4. Eating a lot of salt may lower one's blood pressure

38. Which statement about exercise habits is TRUE? SELECT ALL THE CORRECT ANSWERS.

1. It is dangerous to participate in high intensity physical activity that last for ≥ 30 minutes at a time
2. A healthy person's pulse should start to normalise within 15 minutes after exercise
3. It is good to exercise at least 3 times a week
4. Moderately intense aerobic exercise several hours before bedtime is positively associated with quantity and quality of sleep

39. Which statement about exercise habits is TRUE? SELECT ALL THE CORRECT ANSWERS.

1. Stretching should be a routine part of a person's exercise program
2. Walking and gardening are considered types of exercise that can lower heart disease risk
3. It is dangerous to participate in moderate exercise during pregnancy
4. People who are overweight should not be highly physically active due to increased health risk during exercise

40. In order to obtain health benefits, I should exercise at least: SELECT ALL THE CORRECT ANSWERS.

1. Daily for 60 min, at moderate intensity (it can be cumulative)
2. 3 x week for 30 to 60 min at moderate intensity (could be cumulative)
3. 3 x week for 30 min at high intensity (could be cumulative)
4. 5 x week for 30 min at moderate intensity (could be cumulative)

41. Which statement about active wear (clothing worn during physical activity) is TRUE? SELECT ALL THE CORRECT ANSWERS.

1. The quality of active wear is directly linked to the price thereof
2. Good quality active wear can prevent injuries during activities
3. The brand of active wear influences one's performance during recreational activities

42. Which statement about chronic diseases is TRUE? SELECT ALL THE CORRECT ANSWERS.

1. Non-communicable diseases (diabetes, hypertension etc.) can lead to death
2. Hypertension (high blood pressure) can lead to cardiovascular disease (CVD)

3. Most people can tell whether or not they have high blood pressure without testing
4. People who have diabetes are at higher risk of getting heart disease

43. Which statement about chronic diseases is TRUE? SELECT ALL THE CORRECT ANSWERS.

1. The most important cause of heart attacks is stress
2. Smoking cigarettes increases one's risk for developing heart disease
3. Heart disease is better defined as a chronic, long-term illness

44. Normal cholesterol levels should be:

1. 1.0 – 2.0 mmol/dL
2. ≤ 5.2 mmol/dL
3. 5.3 – 5.9 mmol/dL
4. 6.0 – 7.0 mmol/dL

45. Resting blood pressure values for adults should be:

1. 120/80 mmHg
2. 140/100 mmHg
3. 90/60 mmHg

46. A normal blood sugar level for adults should be:

1. 3-3.9mmol/l (fasting)
2. 4-5.6mmol/l (fasting)
3. 7.1-8mmol/l (fasting)

47. Which statement about body weight is TRUE? SELECT ALL THE CORRECT ANSWERS.

1. Maintaining a healthy body weight is necessary for good health
2. A person's BMI (body mass index) is an indication of one's weight in relation to one's height
3. One may experience being overweight without having a too high body fat percentage

48. Are you currently following a fixed diet / meal plan?

1. Yes
2. No

49. Please indicate the reason for following a fixed diet / meal plan:

1. Weight related reasons (e.g. weight loss / gain)
2. Fitness related reasons (e.g. training for sporting event)
3. Health related reasons (e.g. special diet for chronic disease)

50. Please provide brief details regarding the fixed diet / meal plan you follow. If it is a popular diet / plan, provide the name thereof.



Your score for the knowledge test regarding healthy lifestyle products and issues is:
0.0 out of 36

A complete feedback session will be held after the study was concluded. For any enquiries please contact the researcher per e-mail: steyn.a3@gmail.com

[Thank You for completing this survey](#)

ADDENDUM B: INFORMED CONSENT FORM FROM THE ORIGINAL STUDY



PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

TITLE OF THE RESEARCH PROJECT:

The South African healthy-lifestyle consumer: an urban, corporate profile

REFERENCE NUMBERS: NWU-00202-14-S1

PRINCIPAL INVESTIGATOR: Adri Steyn

ADDRESS:

School for Physiology, Nutrition and Consumer Sciences
North-West University (Potchefstroom campus)
Building F15
Potchefstroom
South Africa
2520

CONTACT NUMBER: 082 334 3639

You are being invited to take part in a research project that forms part of my PhD in Consumer Sciences. Please take some time to read the information presented here, which will explain the details of this project. Please ask the researcher any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and how you could be involved. Also, your participation is **entirely voluntary** and you are free

to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study has been approved by the **Health Research Ethics Committee of the Faculty of Health Sciences of the North-West University (NWU-00202-14-S1)** and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki and the ethical guidelines of the National Health Research Ethics Council. It might be necessary for the research ethics committee members or relevant authorities to inspect the research records.

What is this research study all about?

- This study will be conducted in three office blocks of First National Bank (FNB). It will involve a web-based questionnaire. About 2050 other employees will also participate in this study. Respondents' healthy lifestyle habits, consumer values, internal and external motivations and knowledge of health related products and issues will be tested.
- The objectives of this research are: to develop a profile of healthy-lifestyle consumers in the context of a multi-cultural, South African, urban corporate setting.

Why have you been invited to participate?

- You have been invited to participate because you are employed by FNB.
- You have also complied with the following inclusion criteria: you are computer literate, and have access to a computer and the internet.
- You will be excluded if you are not 18 years or older, or are not permanently employed by FNB.

What will your responsibilities be?

- You will be expected to complete a questionnaire on the internet about your lifestyle habits, values, motivations and knowledge of health related products and issues. It will not take longer than 30 minutes.

Will you benefit from taking part in this research?

- The indirect benefits for you will be that the results of the study could lead to new or better products in certain lifestyle categories to suit your needs. You can also learn about health related issues from the results. Communities could also learn about the benefits of healthy lifestyles and how to choose health-related products. Researchers could get a better understanding of the reasons why people follow a certain lifestyle.
- After you completed the questionnaire, you will get your score for the knowledge test straight away.

Are there risks involved in your taking part in this research?

- The risks in this study are that it takes time to complete the questionnaire. The format of the questionnaire helps you to move through the questions at your own time and pace.

- The internet questionnaire also allows respondents to answer questions in the privacy of their own homes or offices. No one will thus wait or look at your answers.
- Neither your name, personnel number nor the name of the company you work for will be used or published anywhere.
- The benefits outweighs the risk.

What will happen in the unlikely event of some form of discomfort occurring as a direct result of your taking part in this research study?

- Should you have the need for further discussions after completion of the questionnaire; an opportunity will be arranged for you to contact the researcher electronically or telephonically to discuss any discomfort or questions.

Who will have access to the data?

- Confidentiality will be ensured by providing each questionnaire with a random number. Thus no names or personnel numbers will be used. Reporting of findings will be anonymous by not referring to any names. Only the researcher and Statistical Consultation Services of the North-West University will have access to the data. Electronic data will be kept safe and secure by storing it on a password protected computer in the research head's office. No hard copies of data will be printed. Data will be stored for 5 years, where after it will be destroyed.

Will you be paid to take part in this study and are there any costs involved?

- You will not be paid to participate in the study.
- There will also be no costs involved for you, if you do participate.

Is there anything else that you should know or do?

- You can contact Adri Steyn at 082 334 3639 if you have any further queries or encounter any problems.
- You can contact the Health Research Ethics Committee via Mrs Carolien van Zyl at 018 299 2089; carolien.vanzyl@nwu.ac.za if you have any concerns or complaints that have not been adequately addressed by the researcher.
- You will receive a copy of this information and consent form for your own records.

How will you know about the findings?

- The findings of the research will be shared with you when the study is complete. A presentation of results will be held in the conference room of one of the branches, and can be watched by people in other branches (Skype-conference). There will be an opportunity to ask questions after the presentation, which the researcher will answer. The presentation slides, along with a list of questions and answers will also be emailed to all respondents after the session.

Declaration by participant

By clicking the boxes below, I agree to take part in a research study entitled: The South African healthy-lifestyle consumer: an urban, corporate profile.

I declare that:

- I have read this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions to both the person obtaining consent, as well as the researcher and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

- ☐ I HAVE READ AND UNDERSTAND THE PARTICIPANT INFORMATION, AND I DID NOT NEED AN INTERPRETER TO UNDERSTAND THE CONSENT FORM
- ☐ I WILL ASK QUESTIONS TO THE RESEARCH ASSISTANTS IN THE BUILDING SHOULD I NEED MORE INFORMATION
- ☐ I AGREE TO PARTICIPATE IN THE SURVEY

ADDENDUM C: SUPPLEMENTARY TABLES

These tables are supplementary to Chapter 4. The results are presented in article format.

HEALTHY LIFESTYLE HABITS

Table 1: Summary of exploratory factor analysis extracting three lifestyle habit factors of consumers in a South African urban corporate setting

Question	Factor loading		
	Food and sleep	Dedicated efforts	Exercise and relaxation
How often do you eat three full meals daily at regular times?	0.86		
Do you eat breakfast every day (Coffee or tea is, for the purpose of this study, not considered as breakfast)?	0.81		
How often do your meals include all of the basic food groups (fruits, vegetables, proteins, grains, and dairy)?	0.68		
How often do you eat fibre-rich foods such as fruit and wholewheat products?	0.66		
How often do you get adequate sleep (7 to 8 hours a night)?	0.47		
How often do you seek information about your health from health professionals?		0.86	
How often do you observe your body for abnormal changes or danger signs of possible diseases?		0.75	
How often do you eat food containing preservatives? (reversed score)		-0.45	
How often do you participate in moderate exercise (such as brisk walking, low-effort cycling, mowing the lawn, heavy cleaning etc.) two to three times a week?			0.72
How often do you participate in recreational physical activities (such as hiking, swimming, bicycling or dancing)?			0.70
How often do you relax your muscles before you sleep?			0.61
How often do you get exercise in the course of your usual daily activities (such as walking during lunchtime; taking the stairs instead of the elevator; parking your car at a distance from your destination and walking)?			0.54
Do you maintain a moderate body weight for your height?			0.53
How often do you have daily relaxation time?			0.43
Mean inter-item correlation	0.423	0.321	0.251
Cronbach alpha	0.787	0.603	0.671
Mean factor score $\pm$ standard deviation	3.27 $\pm$ 0.86	2.99 $\pm$ 0.77	2.60 $\pm$ 0.67
Keiser-Meyer-Olkin value	0.70		
% Variation explained	49.8%		

Factor loadings; **Likert scale:** 1 = Never, 2 = Seldom, 3 = Sometimes, 4 = Often, 5 = Always; **Mean factor scores:** ≥ 2.5 and < 3.5 = Sometimes, ≥ 3.5 and < 4.5 = Often, ≥ 4.5 = Always; **Inter-item correlations (r):** .1 small, .3 = medium, .5 = large

Table 2: Confirmatory validation of factor analysis measurement model by means of standard regression weights for the three healthy lifestyle habit factors

Standard regression weights			Estimate	P-Value
How often do you eat fibre-rich foods such as fruit and wholewheat products?	<---	Food and sleep	.829	N/A
How often do you eat three full meals daily at regular times?	<---	Food and sleep	.605	P < 0.001
How often do your meals include all of the basic food groups (fruits, vegetables, proteins, grains, and dairy)?	<---	Food and sleep	.820	P < 0.001
Do you eat breakfast every day (Coffee or tea is, for the purpose of this study, not considered as breakfast)?	<---	Food and sleep	.671	P < 0.001
How often do you get adequate sleep (7 to 8 hours a night)?	<---	Food and sleep	.287	P = 0.002
Do you maintain a moderate body weight for your height?	<---	Exercise and relaxation	.390	N/A
How often do you participate in moderate exercise (such as brisk walking, low-effort cycling, mowing the lawn, heavy cleaning etc.) two to three times a week?	<---	Exercise and relaxation	.884	P < 0.001
How often do you participate in recreational physical activities (such as hiking, swimming, bicycling or dancing)?	<---	Exercise and relaxation	.814	P < 0.001
How often do you get exercise in the course of your usual daily activities (such as walking during lunchtime; taking the stairs instead of the elevator; parking your car at a distance from your destination and walking)?	<---	Exercise and relaxation	.420	P = 0.001
How often do you relax your muscles before you sleep?	<---	Exercise and relaxation	.237	P = 0.026
How often do you have daily relaxation time?	<---	Exercise and relaxation	.217	P = 0.038
How often do you observe your body for abnormal changes or danger signs of possible diseases?	<---	Dedicated efforts	.719	N/A
How often do you seek information about your health from health professionals?	<---	Dedicated efforts	.750	P < 0.001
How often do you eat food containing preservatives?	<---	Dedicated efforts	.276	P = 0.011

N/A = Not applicable

SITUATIONAL MOTIVATION

Table 3: Summary of exploratory factor analysis extracting four situational motivations of consumers in a South African urban corporate setting

Question	Factor loading			
	Intrinsic motivation	Identified regulation	Amotivation	Extrinsic motivation
Q1 My current lifestyle is interesting	0.63			
Q5 It is pleasant to follow my current lifestyle	0.89			
Q9 It is fun to follow my current lifestyle	0.85			
Q13 I feel good when following my current lifestyle	0.83			
Q2 I follow my current lifestyle for my own good		0.76		
Q6 I think my current lifestyle is good for me		0.89		
Q10 I follow my current lifestyle by personal decision		0.87		
Q14 I believe it is important for me to follow my current lifestyle		0.76		
Q4 I do not see any good reason to follow my current lifestyle			0.86	
Q16 I am not sure it is a good thing to pursue my current lifestyle			0.73	
Q12 I do not see the benefit of following my current lifestyle			0.70	
Q8 I am not sure that it is worth following my current lifestyle			0.69	
Q7 I have to follow my current lifestyle				-0.86
Q11 I do not have any choice other than to follow my current lifestyle				-0.78
Q15 I feel that I have to follow my current lifestyle				-0.70
Q3 I am supposed to follow my current lifestyle				-0.32
Mean inter-item correlation	0.65	0.62	0.52	0.48
Cronbach alpha coefficient	0.88	0.87	0.81	0.79
Mean factor score Standard deviation	3.48 ± 0.85	3.54 ± 0.86	2.45 ± 0.91	3.54 ± 0.86
Keiser-Meyer-Olkin value	0.86			
% Variation explained	74.47%			

Factor loadings; **Likert scale**: 1 = Strongly disagree, 2 = Disagree, 3 = Tend to agree, 4 = Agree, 5 = Strongly agree; **Mean factor scores**: ≥2.5 and <3.5 = Neither agree nor disagree, ≥3.5 and <4.5 = Agree, ≥4.5 = Strongly Agree; **Inter-item correlations (r)**: .1 small, .3 = medium, .5 = large

Table 4: Validation of confirmatory factor analysis measurement model by means of standard regression weights for the four situational motivational factors

Standard regression weights			Estimate	P-Value
I feel good when following my current lifestyle	<---	Intrinsic	.918	N/A
It is fun to follow my current lifestyle	<---	Intrinsic	.872	P < 0.01
It is pleasant to follow my current lifestyle	<---	Intrinsic	.784	P < 0.01
My current lifestyle is interesting	<---	Intrinsic	.687	P < 0.01
I believe it is important for me to follow my current lifestyle	<---	Identified regulation	.906	N/A
I follow my current lifestyle by personal decision	<---	Identified regulation	.646	P < 0.01
I think my current lifestyle is good for me	<---	Identified regulation	.889	P < 0.01
I follow my current lifestyle for my own good	<---	Identified regulation	.699	P < 0.01
I feel that I have to follow my current lifestyle	<---	Extrinsic	.701	
I do not have any choice other than to follow my current lifestyle	<---	Extrinsic	.816	P < 0.01
I have to follow my current lifestyle	<---	Extrinsic	.847	P < 0.01
I am supposed to follow my current lifestyle	<---	Extrinsic	.456	P < 0.01
I am not sure it is a good thing to pursue my current lifestyle	<---	Amotivation	.880	
I am not sure that it is worth following my current lifestyle	<---	Amotivation	.733	P < 0.01
I do not see the benefit of following my current lifestyle	<---	Amotivation	.722	P < 0.01
I do not see any good reason to follow my current lifestyle	<---	Amotivation	.563	P < 0.01

N/A = Not applicable

		T		CORRELATIONS		L1L2		L1L3		L1L4		L1L5		L1L6		L1L7		L1L8		L1L9		L1L10		L1L11		L1L12		L1L13		L1L14		L1L15		L1L16		L1L17		L1L18		L1L19		L1L20		L1L21		L1L22		L1L23		L1L24		L1L25		L1L26		L1L27		L1L28		L1L29		L1L30		L1L31		L1L32		L1L33		L1L34		L1L35		L1L36		L1L37		L1L38		L1L39		L1L40		L1L41		L1L42		L1L43		L1L44		L1L45		L1L46		L1L47		L1L48		L1L49		L1L50		L1L51		L1L52		L1L53		L1L54		L1L55		L1L56		L1L57		L1L58		L1L59		L1L60		L1L61		L1L62		L1L63		L1L64		L1L65		L1L66		L1L67		L1L68		L1L69		L1L70		L1L71		L1L72		L1L73		L1L74		L1L75		L1L76		L1L77		L1L78		L1L79		L1L80		L1L81		L1L82		L1L83		L1L84		L1L85		L1L86		L1L87		L1L88		L1L89		L1L90		L1L91		L1L92		L1L93		L1L94		L1L95		L1L96		L1L97		L1L98		L1L99		L1L100		L1L101		L1L102		L1L103		L1L104		L1L105		L1L106		L1L107		L1L108		L1L109		L1L110		L1L111		L1L112		L1L113		L1L114		L1L115		L1L116		L1L117		L1L118		L1L119		L1L120		L1L121		L1L122		L1L123		L1L124		L1L125		L1L126		L1L127		L1L128		L1L129		L1L130		L1L131		L1L132		L1L133		L1L134		L1L135		L1L136		L1L137		L1L138		L1L139		L1L140		L1L141		L1L142		L1L143		L1L144		L1L145		L1L146		L1L147		L1L148		L1L149		L1L150		L1L151		L1L152		L1L153		L1L154		L1L155		L1L156		L1L157		L1L158		L1L159		L1L160		L1L161		L1L162		L1L163		L1L164		L1L165		L1L166		L1L167		L1L168		L1L169		L1L170		L1L171		L1L172		L1L173		L1L174		L1L175		L1L176		L1L177		L1L178		L1L179		L1L180		L1L181		L1L182		L1L183		L1L184		L1L185		L1L186		L1L187		L1L188		L1L189		L1L190		L1L191		L1L192		L1L193		L1L194		L1L195		L1L196		L1L197		L1L198		L1L199		L1L200		L1L201		L1L202		L1L203		L1L204		L1L205		L1L206		L1L207		L1L208		L1L209		L1L210		L1L211		L1L212		L1L213		L1L214		L1L215		L1L216		L1L217		L1L218		L1L219		L1L220		L1L221		L1L222		L1L223		L1L224		L1L225		L1L226		L1L227		L1L228		L1L229		L1L230		L1L231		L1L232		L1L233		L1L234		L1L235		L1L236		L1L237		L1L238		L1L239		L1L240		L1L241		L1L242		L1L243		L1L244		L1L245		L1L246		L1L247		L1L248		L1L249		L1L250		L1L251		L1L252		L1L253		L1L254		L1L255		L1L256		L1L257		L1L258		L1L259		L1L260		L1L261		L1L262		L1L263		L1L264		L1L265		L1L266		L1L267		L1L268		L1L269		L1L270		L1L271		L1L272		L1L273		L1L274		L1L275		L1L276		L1L277		L1L278		L1L279		L1L280		L1L281		L1L282		L1L283		L1L284		L1L285		L1L286		L1L287		L1L288		L1L289		L1L290		L1L291		L1L292		L1L293		L1L294		L1L295		L1L296		L1L297		L1L298		L1L299		L1L300		L1L301		L1L302		L1L303		L1L304		L1L305		L1L306		L1L307		L1L308		L1L309		L1L310		L1L311		L1L312		L1L313		L1L314		L1L315		L1L316		L1L317		L1L318		L1L319		L1L320		L1L321		L1L322		L1L323		L1L324		L1L325		L1L326		L1L327		L1L328		L1L329		L1L330		L1L331		L1L332		L1L333		L1L334		L1L335		L1L336		L1L337		L1L338		L1L339		L1L340		L1L341		L1L342		L1L343		L1L344		L1L345		L1L346		L1L347		L1L348		L1L349		L1L350		L1L351		L1L352		L1L353		L1L354		L1L355		L1L356		L1L357		L1L358		L1L359		L1L360		L1L361		L1L362		L1L363		L1L364		L1L365		L1L366		L1L367		L1L368		L1L369		L1L370		L1L371		L1L372		L1L373		L1L374		L1L375		L1L376		L1L377		L1L378		L1L379		L1L380		L1L381		L1L382		L1L383		L1L384		L1L385		L1L386		L1L387		L1L388		L1L389		L1L390		L1L391		L1L392		L1L393		L1L394		L1L395		L1L396		L1L397		L1L398		L1L399		L1L400		L1L401		L1L402		L1L403		L1L404		L1L405		L1L406		L1L407		L1L408		L1L409		L1L410		L1L411		L1L412		L1L413		L1L414		L1L415		L1L416		L1L417		L1L418		L1L419		L1L420		L1L421		L1L422		L1L423		L1L424		L1L425		L1L426		L1L427		L1L428		L1L429		L1L430		L1L431		L1L432		L1L433		L1L434		L1L435		L1L436		L1L437		L1L438		L1L439		L1L440		L1L441		L1L442		L1L443		L1L444		L1L445		L1L446		L1L447		L1L448		L1L449		L1L450		L1L451		L1L452		L1L453		L1L454		L1L455		L1L456		L1L457		L1L458		L1L459		L1L460		L1L461		L1L462		L1L463		L1L464		L1L465		L1L466		L1L467		L1L468		L1L469		L1L470		L1L471		L1L472		L1L473		L1L474		L1L475		L1L476		L1L477		L1L478		L1L479		L1L480		L1L481		L1L482		L1L483		L1L484		L1L485		L1L486		L1L487		L1L488		L1L489		L1L490		L1L491		L1L492		L1L493		L1L494		L1L495		L1L496		L1L497		L1L498		L1L499		L1L500		L1L501		L1L502		L1L503		L1L504		L1L505		L1L506		L1L507		L1L508		L1L509		L1L510		L1L511		L1L512		L1L513		L1L514		L1L515		L1L516		L1L517		L1L518		L1L519		L1L520		L1L521		L1L522		L1L523		L1L524		L1L525		L1L526		L1L527		L1L528		L1L529		L1L530		L1L531		L1L532		L1L533		L1L534		L1L535		L1L536		L1L537		L1L538		L1L539		L1L540		L1L541		L1L542		L1L543		L1L544		L1L545		L1L546		L1L547		L1L548		L1L549		L1L550		L1L551		L1L552		L1L553		L1L554		L1L555		L1L556		L1L557		L1L558		L1L559		L1L560		L1L561		L1L562		L1L563		L1L564		L1L565		L1L566		L1L567		L1L568		L1L569		L1L570		L1L571		L1L572		L1L573		L1L574		L1L575		L1L576		L1L577		L1L578		L1L579		L1L580		L1L581		L1L582		L1L583		L1L584		L1L585		L1L586		L1L587		L1L588		L1L589		L1L590		L1L591		L1L592		L1L593		L1L594		L1L595		L1L596		L1L597		L1L598		L1L599		L1L600		L1L601		L1L602		L1L603		L1L604		L1L605		L1L606		L1L607		L1L608		L1L609		L1L610		L1L611		L1L612		L1L613		L1L614		L1L615		L1L616		L1L617		L1L618		L1L619		L1L620		L1L621		L1L622		L1L623		L1L624		L1L625		L1L626		L1L627		L1L628		L1L629		L1L630		L1L631		L1L632		L1L633		L1L634		L1L635		L1L636		L1L637		L1L638		L1L639		L1L640		L1L641		L1L642		L1L643		L1L644		L1L645		L1L646		L1L647		L1L648		L1L649		L1L650		L1L651		L1L652		L1L653		L1L654		L1L655		L1L656		L1L657		L1L658		L1L659		L1L660		L1L661		L1L662		L1L663		L1L664		L1L665		L1L666		L1L667		L1L668		L1L669		L1L670		L1L671		L1L672		L1L673		L1L674		L1L675		L1L676		L1L677		L1L678		L1L679		L1L680		L1L681		L1L682		L1L683		L1L684		L1L685		L1L686		L1L687		L1L688		L1L689		L1L690		L1L691		L1L692			
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T-TESTS AND LEVENE'S TEST

Table 6: T-tests for examining gender difference relating to lifestyle habits

<i>Factors and items</i>	<i>Gender</i>	<i>N</i>	<i>Mean</i>	<i>Std deviation</i>	<i>Effect size[#]</i>
<i>LH* food</i>	Male	45	3.2444	0.81786	0.04
	Female	88	3.2801	0.89165	
<i>LH dedicated efforts</i>	Male	45	3.0259	0.77846	0.06
	Female	86	2.9787	0.77451	
<i>LH exercise</i>	Male	45	2.6889	0.63026	0.19
	Female	86	2.5601	0.69387	
<i>LH non-smoker</i>	Male	45	3.7556	1.44844	0.27
	Female	86	4.1395	1.40723	
<i>LH no alcohol</i>	Male	45	3.4889	1.27247	0.56
	Female	86	4.1977	1.09351	
<i>Intrinsic motivation</i>	Male	36	3.6343	0.74410	0.26
	Female	67	3.4030	0.89713	
<i>Identified regulation</i>	Male	36	3.5347	0.74439	0.01
	Female	67	3.5398	0.91682	
<i>External motivation</i>	Male	36	2.9444	0.74669	0.39
	Female	67	2.6007	0.88876	
<i>Amotivation</i>	Male	36	2.4167	0.84515	0.06
	Female	66	2.4722	0.94511	

[#]Cohen's d-values used as effect sizes: $d = 0.2$ interpreted as a small effect, $d = 0.5$ a medium effect and $d = 0.8$ a large effect size;

*LH = lifestyle habit

Table 7: Levene's test for equity of variances relating to gender

		F	Sig.	T-test for equality of means					
				t	Sig. (2-tailed)	Mean difference	Std error difference	95% confidence interval of the difference	
								Lower	Upper
Lifestyle habits	Equal variances assumed	2.637	0.107	0.426	0.671	0.05	0.11	-0.17	0.27
	Equal variances not assumed			0.456	0.649	0.05	0.10	-0.16	0.25
LH_food	Equal variances assumed	0.709	0.401	-0.224	0.823	-0.04	0.16	-0.35	0.28
	Equal variances not assumed			-0.231	0.818	-0.04	0.15	-0.34	0.27
LH_dedicated_efforts	Equal variances assumed	0.130	0.719	0.331	0.741	0.05	0.14	-0.24	0.33
	Equal variances not assumed			0.330	0.742	0.05	0.14	-0.24	0.33
LH_exercise	Equal variances assumed	1.529	0.219	1.041	0.300	0.13	0.12	-0.12	0.37
	Equal variances not assumed			1.072	0.286	0.13	0.12	-0.11	0.37
LH_non-smoker	Equal variances assumed	1.103	0.296	-1.468	0.144	-0.38	0.26	-0.90	0.13
	Equal variances not assumed			-1.455	0.149	-0.38	0.26	-0.91	0.14
LH_no alcohol	Equal variances assumed	3.266	0.073	-3.328	0.001	-0.71	0.21	-1.13	-0.29
	Equal variances not assumed			-3.173	0.002	-0.71	0.22	-1.15	-0.26
Intrinsic_mot	Equal variances assumed	3.113	0.081	1.321	0.189	0.23	0.18	-0.12	0.58
	Equal variances not assumed			1.397	0.166	0.23	0.17	-0.10	0.56
Identified_regulation	Equal variances assumed	3.121	0.080	-0.029	0.977	-0.01	0.18	-0.36	0.35
	Equal variances not assumed			-0.030	0.976	-0.01	0.17	-0.34	0.33
External_motivation	Equal variances assumed	0.432	0.512	1.975	0.051	0.34	0.17	0.00	0.69
	Equal variances not assumed			2.081	0.041	0.34	0.17	0.02	0.67
Amotivation	Equal variances assumed	0.394	0.532	-0.294	0.769	-0.06	0.19	-0.43	0.32
	Equal variances not assumed			-0.304	0.762	-0.06	0.18	-0.42	0.31

Table 8: T-test for examining differences relating to home owner status and situational motivations

<i>Home ownership</i>	<i>Yes/No</i>	<i>N</i>	<i>Mean</i>	<i>Std deviation</i>	<i>Effect size[#]</i>
<i>LH* food</i>	Yes	81	3.2142	0.84872	0.15
	No	52	3.3519	0.89014	
<i>LH dedicated efforts</i>	Yes	80	3.0438	0.70149	0.14
	No	51	2.9183	0.87583	
<i>LH exercise</i>	Yes	80	2.5375	0.68075	0.25
	No	51	2.7092	0.65368	
<i>LH non-smoker</i>	Yes	80	3.9000	1.48068	0.19
	No	51	4.1765	1.33725	
<i>LH no alcohol</i>	Yes	80	4.0375	1.11881	0.16
	No	51	3.8235	1.32221	
<i>Intrinsic motivation</i>	Yes	59	3.4675	0.83978	0.04
	No	44	3.5057	0.87353	
<i>Identified regulation</i>	Yes	59	3.5240	0.87975	0.04
	No	44	3.5568	0.83464	
<i>External motivation</i>	Yes	59	2.6907	0.77590	0.07
	No	44	2.7614	0.95685	
<i>Amotivation</i>	Yes	59	2.2924	0.84735	0.40
	No	43	2.6725	0.94987	

[#]Cohen's d-values used as effect sizes: $d = 0.2$ interpreted as a small effect, $d = 0.5$ a medium effect and $d = 0.8$ a large effect size;

*LH = lifestyle habit

Table 9: Levene's test for equity of variances relating to home ownership

		t-test for Equality of Means							
		F	Sig.	t	Sig. (2-tailed)	Mean difference	Std error difference	95% confidence interval of the difference	
								Lower	Upper
Lifestyle habits	Equal variances assumed	0.158	0.691	-1.056	0.293	-0.11	0.11	-0.32	0.10
	Equal variances not assumed			-1.071	0.286	-0.11	0.10	-0.32	0.10
LH_food	Equal variances assumed	0.401	0.528	-0.896	0.372	-0.14	0.15	-0.44	0.17
	Equal variances not assumed			-0.887	0.377	-0.14	0.16	-0.45	0.17
LH_dedicated_efforts	Equal variances assumed	4.074	0.046	0.905	0.367	0.13	0.14	-0.15	0.40
	Equal variances not assumed			0.862	0.391	0.13	0.15	-0.16	0.41
LH_exercise	Equal variances assumed	0.000	0.996	-1.429	0.155	-0.17	0.12	-0.41	0.07
	Equal variances not assumed			-1.442	0.152	-0.17	0.12	-0.41	0.06
LH_non-smoker	Equal variances assumed	3.627	0.059	-1.081	0.282	-0.28	0.26	-0.78	0.23
	Equal variances not assumed			-1.106	0.271	-0.28	0.25	-0.77	0.22
LH_no alcohol	Equal variances assumed	3.730	0.056	0.994	0.322	0.21	0.22	-0.21	0.64
	Equal variances not assumed			0.958	0.341	0.21	0.22	-0.23	0.66
Intrinsic_mot	Equal variances assumed	0.330	0.567	-0.224	0.823	-0.04	0.17	-0.38	0.30
	Equal variances not assumed			-0.223	0.824	-0.04	0.17	-0.38	0.30
Identified_regulation	Equal variances assumed	0.024	0.878	-0.191	0.849	-0.03	0.17	-0.37	0.31
	Equal variances not assumed			-0.193	0.848	-0.03	0.17	-0.37	0.30
External_motivation	Equal variances assumed	3.010	0.086	-0.414	0.680	-0.07	0.17	-0.41	0.27
	Equal variances not assumed			-0.401	0.689	-0.07	0.18	-0.42	0.28
Amotivation	Equal variances assumed	0.492	0.484	-2.126	0.036	-0.38	0.18	-0.73	-0.03
	Equal variances not assumed			-2.088	0.040	-0.38	0.18	-0.74	-0.02

ADDENDUM D: ETHICS APPROVAL CERTIFICATE



Ms Yolande du Preez

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**Faculty of Health Sciences Ethics
Office for Research, Training
and Support**

Tel: 018 299 2092
Email: minnie.greeff@nwu.ac.za

8 March 2019

Dear Ms du Preez

PROOF OF ATTENDANCE AND ASSESSMENT

This letter certifies that you have attended the 2-day ethics training entitled:

The Basics of Health Research Ethics

(Accreditation number: PSB002/110/01/2019 from University of Free-State CPD accreditation
department accredited by the HPCSA)

Presenter: Prof M Greeff (Head of the Health Sciences Ethics Office for Research, Training and Support) on
the 22nd – 23rd January 2019.

This letter of attendance, serves as proof of ethics training and assessment and is valid for three (3) years and
expires on 31 January 2022. (Where applicable, Ethics CEUs awarded: 14 CEUs)

Yours sincerely

Digitally signed
by Prof Minnie
Greeff
Date: 2019.03.20
16:01:35 +02'00'

Prof Minnie Greeff
Head of Health Sciences Ethics
Office for Research, Training and Support

Prof Jeanetta du Plessis
Deputy Dean: Research and Innovation
Faculty of Health Sciences

Current details: (20536690) G:\My Drive\6. Research and Postgraduate Education\6.1.5.7 Training\6.1.5.7.6_Letter of Attendance_Template_BOHRE.docm
8 March 2019

File reference: 6.1.5.7.6

24 January 2020

ETHICS APPROVAL LETTER OF STUDY

Based on approval by the North-West University Health Research Ethics Committee (NWU-HREC) on 24/01/2020, the NWU-HREC hereby approves your study as indicated below. This implies that the NWU-HREC grants its permission that, provided the general conditions specified below are met and pending any other authorisation that may be necessary, the study may be initiated, using the ethics number below.

Study title: The motivation for healthy lifestyle habits amongst South African urban corporate consumers

Principal Investigator/Study Supervisor/Researcher: Prof M van der Merwe

Student: Y du Preez-25356887

Ethics number:

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Institution Study Number Year Status

Status: S = Submission; R = Re-Submission; P = Provisional Authorisation;
A = Authorisation

Application Type: Single study

Commencement date: 24/01/2020

Expiry date: 28/02/2021

Risk:

Minimal

Approval of the study is provided for a year, after which continuation of the study is dependent on receipt and review of an annual monitoring report and the concomitant issuing of a letter of continuation. A monitoring report is due at the end of February annually until completion.

General conditions:

While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, the following general terms and conditions will apply:

- The principal investigator/study supervisor/researcher must report in the prescribed format to the NWU-HREC:
 - Annually on the monitoring of the study, whereby a letter of continuation will be provided annually, and upon completion of the study; and
 - without any delay in case of any adverse event or incident (or any matter that interrupts sound ethical principles) during the course of the study.
- The approval applies strictly to the proposal as stipulated in the application form. Should any amendments to the proposal be deemed necessary during the course of the study, the principal investigator/study supervisor/researcher must apply for approval of these amendments at the NWU-HREC, prior to implementation. Should there be any deviations from the study proposal without the necessary approval of such amendments, the ethics approval is immediately and automatically forfeited.
- Annually a number of studies may be randomly selected for active monitoring.
- The date of approval indicates the first date that the study may be started.

ADDENDUM E: STATISTICAL APPROVAL CERTIFICATE

Health Research Ethics Application

Study Leader (Title, Initials & Surname)	Study Title
PROF D VAN DER MERWE	The motivation for healthy lifestyle habits amongst South African urban corporate consumers.

NWU Ethics Number

N	W	U	-						-			-		
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8.2 Sec 8b: Statistical Consultant (If applicable)

The statistician of the Statistical Consultation Service of the North-West University completes this section (where applicable).

8.2.1 Have you ascertained that the statistical analyses to be used in this study is justifiable according to your judgement?

Please mark with X in the appropriate box and provide details.

Yes	No	
☒	☐	

Name (Title, Full Names & Surname)	Qualifications
Prof Susanna Maria Ellis Pr Sci Nat	PhD (Statistics)



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Signature

Date

Remember to save your document regularly as you complete it!

ADDENDUM F: PERMISSION TO USE DATA FROM A PREVIOUS STUDY



The Chairperson
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2 October 2019

Dear Professor Towers

PERMISSION TO USE DATA FROM A PREVIOUS STUDY FOR CONSUMER SCIENCES MASTER'S AFFILIATED STUDY

With this I grant permission that data from the project, "**The South African healthy-lifestyle consumer: an urban, corporate profile**" NWU-00202-14-A1 (M van der Merwe-A Steyn), may be used by the Master of Consumer Sciences student, Ms Yolande du Preez. The intended affiliated will be titled "The motivations for healthy lifestyle habits amongst South African urban corporate consumers", in which I will act as the study leader of this project and Dr Annchen Mielmann as the co-leader.

The objectives of the **affiliated study** among consumers in an urban-corporate setting are:

- To describe the demographic characteristics of consumers
- To determine the healthy lifestyle habits of consumers
- To determine the situational motivations for consumers to pursue their healthy lifestyle habits
- To determine the associations between healthy lifestyle habits and situational motivations of consumers from different demographic subgroups

The objectives of the **original study** were as follows in a multi-cultural, South African, urban corporate setting:

1. To determine the main healthy lifestyle habits of urban corporate consumers
2. To determine the consumer values associated with a healthy lifestyle
3. To determine the internal and external motivations of urban corporate healthy-lifestyle consumers to pursue a healthy lifestyle
4. To determine South African urban corporate healthy-lifestyle consumers' knowledge of health-related products and issues
5. To develop a profile of the South African urban corporate healthy-lifestyle consumer

The affiliated study of Ms Du Preez will focus on data from objectives 1 and 3 of the original study. The data required will concern questions 1-21 (demographics), 22 (healthy lifestyle habit scale) and 24 (motivation for lifestyle scale).

Only data from the above question will be provided to the student for analysis with the aid of Prof Suria Ellis upon approval of the HREC application. The data from the original study is already anonymised.

Yours sincerely,

Prof Daleen van der Merwe

Principal investigator: Original study and affiliated Master's study



SCIENTIFIC AFRICAN

AUTHOR INFORMATION PACK

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DESCRIPTION

Scientific African is a **peer reviewed, open access, inter- and multidisciplinary scientific journal** that is dedicated to expanding access to African research, increasing intra-African scientific collaboration, and building academic research capacity in Africa. The journal aims to provide a modern, highly-visible platform for publishing pan-African research and welcomes submissions from all scientific disciplines in the following broad categories:

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 CHE - Chemistry
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Titel: The motivation for healthy lifestyle habits amongst South African urban corporate consumers

Sections edited:

- ADDENDUM
- ARTICLE
- CONCLUDING CHAPTER
- LITERATURE STUDY
- SUMMARY

Initials and surname: Y du Preez

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Degree: Master of Consumer Science

Faculty: Health Science - Consumer Sciences

University: North-West University

Sincerely,

Linda Botha
Managing Director

17 La Rochelle Street
Berg-en-Dal
WELLINGTON
7655
9 December 2020

TO WHOM IT MAY CONCERN:

I hereby confirm that chapter 1 (Introduction) and chapter 3 (Methodology) of the thesis by Y du Preez, Student number 25356887, was groomed to the best of my ability, including some recommendations to improve the language and enhance the presentation.

Rev Claude Vosloo
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PostGradSupport

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QUALITY CONTROL: REFERENCING PROTOCOL

To whom it may concern

I, Elsa Maria Esterhuizen, hereby declare that the quality control of the reference list according to the **NWU Harvard** guidelines, as used in the thesis submitted for the degree **Master of Consumer Science** at the North-West University, Potchefstroom Campus
by

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(orcid.org/0000-0001-6906-414X):

The motivation for healthy lifestyle habits, amongst
South African urban corporate consumers

was conducted and completed on 2 December 2020.

E.M. Esterhuizen
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The motivation for healthy lifestyle habits, amongst South African urban corporate consumers

SUMMARY

Consumers' healthy lifestyle habits play a vital role in their overall well-being. In analysing and grasping the role that healthy lifestyle habits play, the motivations that consumers require to adopt and maintain such habits in an urban corporate setting warranted investigation. Research indicates that consumers have been placing more emphasis on their health and lifestyle habits (LH); however, consumers in general often lack the necessary motivations to maintain these healthy lifestyle habits.

In contrast to the emphasis placed on healthy lifestyle habits, there is also a dramatic negative shift in consumers' lifestyle habits due to urbanisation. Poor food choices and a lack of physical activity available in a fast-paced environment may lead to the increasing occurrence of non-communicable diseases (NCDs). According to previous research, NCDs are creating a rapidly growing problem, especially in an emerging country such as South Africa. The South African urban corporate setting exposes consumers to a working environment that is synonymous with high levels of stress and time constraints. It is important to identify what healthy lifestyle habits these consumers exhibit. In addition, it is necessary to determine what their motivations are in adopting additional healthy lifestyle habits.

A gap exists in current research and knowledge concerning consumers' healthy lifestyle habits and the associated situational motivation factors. This study set out to investigate the lifestyle habits of consumers in a South African urban corporate setting in terms of their health and the situational motivations that encouraged them to follow their current lifestyle. Employers tend to rely on external motivational factors such as incentives to motivate consumers, more particularly employees, to engage in health-promoting wellness programmes. However, research has established that this form of motivation does not have a lasting effect on consumers' health. Furthermore, consumers are seemingly unaware of the required motivations for maintaining a healthy lifestyle and the possible positive influence that it may have on their health.

A quantitative, descriptive, cross-sectional survey was employed for this study. Data were collected from South African urban corporate consumers (N= 157) between the ages of 18 and 54 years, using convenience sampling. The instrument for data collection during this study was an electronic questionnaire administered through Question Pro. Face and content

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