Cultural Capital and Self-determined Behaviour: Conceptual and Empirical Evidence of Smoking Cessation in Egypt

Abstract

Purpose
Despite the prevalence of tobacco use, Egypt lacked smoking cessation treatments to combat the nation's rising smoking population and studies on smoking cessation were limited in the majority of low- and middle-income countries. There is an urgent need to study the enablers of smoking cessation.

Design/Methodology/Approach
This study adopted a quantitative research approach to test the conceptual framework. Data were collected using two sampling methods: a random sample in the first phase followed by a snowball strategy. A total of 569 ex-smokers who had successfully stopped smoking completed self-administered questionnaires. Structural equation modelling was adopted for the data analysis.

Findings
The findings of this study indicate that the accumulation of Cultural Capital could serve as an independent cause for successful smoking cessation behaviour in Egypt.

Originality
To the author's knowledge, this is the first study to expand Self-determination Theory and combine Cultural Capital to understand successful smoking cessation behaviour. While most studies focused on current smokers and intentions to quit, this study assessed ex-smokers who had successfully ceased smoking. It confirmed that Cultural Capital alone could contribute to behavioural and sustained behavioural change.

Policy Implications
Egypt should invest in cultural activities and educational establishments which not only help its smoking population acquire new skills but also contribute to successful and sustained smoking cessation.

Keywords
Social Marketing, Self-determination Theory, Cultural Capital, Smoking Cessation, Sustained Behavioural Change, Autonomous Motivation.

1.0 Introduction

The implementation of tobacco control policies has contributed to significant progress in smoking cessation behaviours in developing countries (Feliu *et al*., 2020). The tobacco industry has refocused its efforts on countries with lax enforcement of tobacco policies (Banks *et al*., 2017; Maziak *et al*., 2013). Consequently, the use of tobacco products has increased significantly in underdeveloped regions (Giovino *et al*., 2012; Pampel, 2006; Safiri *et al*., 2021). However, research is scarce on smoking cessation in low and middle-income countries (Akanbi *et al*., 2019), and effective smoking cessation programs are unavailable in those neglected areas (Maziak *et al*., 2004; Owotomo, 2016). Egypt has the highest smoking rate among Arab countries (Abo Elkheir and Sobh, 2016) and lacked smoking cessation treatments (Abdelazim *et al*., 2018; Bader *et al*., 2018).

Most of the smoking-related research in Egypt examined the impact of tobacco consumption and taxation (A. Mostafa *et al*., 2023) or measured the effect of warning labels on motivation to quit (Farran *et al*., 2021; A. Mostafa *et al*., 2018; A. Mostafa *et al*., 2021). Smoking cessation research mostly focused on developed countries, with few comparable studies in low and middle-income countries (Martins *et al*., 2021), such as Egypt (Fouda *et al*., 2018). Most published studies focused on smoking cessation intention rather than actual cessation as an end-point behaviour, (Khattab *et al*., 2016; ElShahawi *et al*., 2022; Ba-Break *et al*., 2021). Limited research has tried to explain smokers' attitudes towards cessation (Frere *et al*., 2024; Shahat *et al*., 2000) and quitting patterns (Anwar and Senosy, 2020; El-Wahab, 2020). Previous cessation studies primarily focused on current Egyptian smokers, but not smokers who have successfully quit.

To fill this knowledge gap, this study investigated smoking cessation in Egypt using a theory adaptation approach because it provides a structured framework for analysing behaviours (Rundle-Thiele *et al*., 2019) and aids health promotion research and intervention planning (Cheung *et al*., 2020). This study seeks to broaden the theoretical foundations of social marketing (Farrukh *et al*., 2021) since theory in social marketing remains underused (Willmott and Rundle-Thiele, 2022). Additionally, to identify non-therapeutic smoking cessation determinants among Egyptians because it is considered the most cost-effective approach to smoking cessation (Abd El-Wahab, 2021). Motivation has been identified as a critical enabler of smoking cessation (Buczkowski *et al*., 2014; Pieiro *et al*., 2016; Abd ElWahab, 2021), however, it has been ambiguous about what motivation means to smokers versus researchers (Smith *et al*., 2015). Earlier discussions of motivation concentrated on practical consequences or broad overviews without delving deeply into the theory (Kusurkar *et al*., 2011). A knowledge gap remains about the understanding of different motivational types, and what they actually mean for smokers. The Self-determination Theory (SDT) is introduced to guide this study, as it emphasises on quality of motivation rather than quantity (Sansone and Tang, 2021; Niven and Markland, 2016). SDT was highlighted by several systematic review papers (Sheeran *et al*., 2020; Gillison *et al*., 2019; Ntoumanis *et al*., 2020), for its potential to explain behaviour change and

maintain changed behaviours (Tessier *et al.*, 2018; Ryan *et al*., 2008; Escriva-Boulley *et al*., 2018; Ryan *et al*., 2008), which is a distinctive advantage of the theory compared to others (Kwasnicka *et al*., 2016). It is envisaged that SDT will aid this study's investigation into how ex-smokers successfully quit and maintain their smoking cessation behaviour.

The premise of SDT is based on three fundamental needs (autonomy, competence, and relatedness), and when those needs are met, humans form internal reasons to perform specific behaviours; these internal reasons are classified as 'autonomous motivation' (Zeigler-Hill and Shackelford, 2020). When those needs are not met, humans develop controlled reasons such as guilt, shame, and obligations to perform certain behaviours; these controlled reasons are specified as 'controlled motivation' (Olafsen *et al*., 2021). Some researchers have questioned the validity of this fundamental proposition and empirical evidence suggested that the three SDT needs are universal regardless of cultural differences (Damianus and Theogenia, 2017), which makes this theory susceptible to criticism. In addition, according to Cheung *et al*. (2020), SDT lacked empirical testing in terms of motivational factors within the process of behavioural change. To address these concerns, this study merged SDT with another theoretical framework - Culture Capital (CC) to test their effects on behavioural and sustained behavioural change.

It is suggested that when cultural capital intervenes, sustainable behaviours can be practised and preserved until they become norms and cultures, making behavioural change long-term rather than temporary (Raissa *et al*, 2021). Therefore, this study utilised CC in attempt to understand smoking cessation behaviour because theoretically, CC has proved to be an important lens independently (Mackenbach, 2012). Past studies revealed that it acted as an enabler for adults in Saudi Arabia to attempt tobacco cessation (Monshi *et al*., 2023). CC has the potential to reduce smoking and alcohol consumption (Wang et al., 2021), and modify health attitudes (Ohashi *et al*., 2017; Khawaja and Mowafi, 2006). As suggested by Zhang *et al*. (2021), more theory modification or theoretical integration was needed to understand behavioural change better. Therefore, this study's objectives are:

1, to test the impact of cultural capital accumulation on different motivational forms of self-determined behaviour amongst ex-smokers in Egypt.

2, to examine the effects of cultural capital accumulation and self-determined behaviour on smoking cessation behaviour in Egypt.

2.0 Theoretical Overview

2.1 Self-determination Theory

The general claim of the Self-determination Theory is around the influence of three fundamental needs, namely autonomy, relatedness, and competence, on individuals' wellbeing and healthy lifestyles (Milyavskaya and Koestner, 2011; Rijavec *et al*., 2011;

Ryan and Deci, 2000). Frustration or dissatisfaction with any of those needs cause disruptions to psychological growth, internalization, and wellbeing (Van den Broeck *et al.,* 2016). The term 'autonomy' refers to the desire to be self-determining and capable of acting according to one's core beliefs and values (Martela and Riekki, 2018). The need for 'relatedness' entails the requirement for humans to feel connected to and be accepted by those in their network (Ryan and Deci, 2017). Finally, believing in one's own ability and capabilities satisfies the need for 'competence' (Legault, 2017).

Scholars used empirical evidence to confirm that these three fundamental needs are considered universal (Cunningham *et al*., 2021; Deci and Ryan, 2008; Milyavskaya *et al*., 2009; Ohajunwa and Mji, 2018; Vansteenkiste *et al.,* 2020). However, some researchers have questioned SDT's universality by suggesting that this theory neglected a person's unique cultural idiosyncrasies (Ginevra *et al*., 2013; Chao and Tseng, 2002; Kaplan and Madjar, 2017), particularly those of autonomy and relatedness in Western and Eastern society (Tang *et al*., 2021). This critique focuses on the level of autonomy that differs in various cultures (Wannheden *et al*., 2021), for example, individuals from Eastern collectivistic cultures are less respectful of individual liberty than those from Western individualistic cultures (Jang *et al*., 2009). Gonzalez-Cutre *et al*. (2016) and Fernandez Espnola *et al.* (2020) suggested additional needs beyond those mentioned in the original SDT theory. However, Baxter and Pelletier (2019) raised the question of how many needs should be included and whether they are culturally appropriate (Vansteenkiste *et al*., 2020). Egypt is recognised as a collectivist culture (Elsaid and Elsaid, 2012). Taking into account the above critique, using SDT alone might not be sufficient to comprehend the complex behaviour of smoking cessation, and bringing in another theoretical perspective is needed to produce a better understanding.

2.2 Bourdieu's Cultural Capital

Bourdieu (1986) proposed three types of capital: social, economic, and cultural capital. While this study cannot assert that one capital is more significant than the other, it is claimed that the better established a group's Cultural Capital (CC) is, the greater their opportunity to develop all their capitals in accordance (Raissa *et al.,* 2021). According to Bourdieu (1977), CC has three types: embodied, objectified, and institutionalised. The embodied type is defined as "long-lasting dispositions of the mind and body" (Bourdieu, 1986, p. 47), and thus it is believed that it takes time to attain this state, but it can be transmitted from parent to child (Claussen and Osborne, 2012). Also, the embodied type has the strongest influence on human behaviour and choices (Hampton-Garland and Pamela, 2015). The objectified capital refers to cultural objects that can be transmitted between individuals and could include books, musical instruments and paintings (Bourdieu, 1986). Finally, institutionalised cultural capital refers to a person's 'cultural competence', or otherwise those items that add credence to a person's opinions or actions.

Institutionalised methods of demonstrating such capital are typically academic credentials and qualifications (Bourdieu, 1986).

2.3 Self-determination Theory and Cultural Capital

CC is a nonmaterial resource that accumulates over time as a result of education and lifelong socialisation (Pinxten and Lievens, 2014). It included the specific kinds of knowledge and skills that people developed because of their training in the cultural disciplines. This capital requires interaction with others and lifelong learning through discussions, socialisation, competencies, and credentials (Hashemi *et al*., 2018). Although SDT may be social in nature (Martela *et al*., 2021; Deci and Ryan, 2012), individuals won't directly satisfy their basic needs unless they participate in activities that foster connection and confidence (Ryan, Soenens, and Vansteenkiste, 2019). Bourdieu (1986) stated that cultural events and attendance are social and cultural experiences often gained through social contact (Lee, Chung, and Park, 2016). Social capital requires interaction with others and lifelong learning through discussions, socialisation, competencies, and credentials (Hashemi *et al*., 2018).

Additionally, studies in CC argued that the skills, credentials, and values acquired throughout a lifetime are not inheritable and cannot be conveyed by individual mechanisms (Emirbayer and Williams, 2005), indicating that each individual is accountable for developing his or her own cultural capital using an acquisition process. Also, individuals with significant cultural capital can shape their surroundings and define circumstances (Vassenden and Jonvik, 2018), implying that the process of acquisition and accumulation of cultural capital itself was based on self-selection and freedom of choice (Kim *et al*., 2020). If individuals are not satisfied with their basic needs, they cannot accumulate cultural capital. Thus, this study proposes that the different forms of CC could substitute SDT's three basic needs to develop motivations that result in behavioural change. The argument that cultural capital is universal or global is predicated on the premise that cultural capital serves as an indicator of one's global culture (Lamont and Lareau, 1988; Prieur and Savage 2011). Hence, this study suggests CC could be effectively utilised to assess the development of motivations that affect behavioural change while addressing SDT's criticism of not being able to consider cultural differences. This study's main theory assumption and argument is illustrated below in Figure 1:

[Insert Figure 1 here]

This study proposes that three basic needs identified in the SDT can be embedded in the embodied and institutionalized indicators of CC. Autonomy (SDT need) implies that people choose their behaviours independently and sense ownership over them (Laporte *et al*., 2021). Bourdieu discussed freedom of choice through education (Lamont and Lareau,

1988) and the process of self-selection was essential for the accumulation of cultural capital (Kim, *et al*., 2020). As a result, the study proposes that the need for autonomy is embedded in the institutionalised dimension of CC via actions in credentials earned. For the competency (SDT need), it symbolises the need to feel competent and efficacious in one's skills and abilities **(**Wang *et al*., 2019). This is also embodied in the CC in which Bourdieu defined cultural capital owners as having achieved competence through the acquisition of cultural forms (Mahar *et al*., 1990). Finally, the third need in the SDT is relatedness, which is the need for connection and relationships (Miller and Gramzow, 2016), this is also incorporated in the accumulation of CC through social interactions and relationships, where greater cultural capital implies more social capital (Novisky, 2018). As recommended by Richards and Johnson (2014), exchanging CC indicators and SDT needs could maintain theoretical coherence and reduce redundancy.

3.0 Conceptual Framework

CC obtained by freedom satisfies self-determination needs (Kim *et al*., 2020), and CC cannot be forced or controlled. This suggests that the psychological needs associated with each behaviour probably impact motivation (Ahmadi *et al*., 2023). Hence, this study proposes the following two hypotheses:

- H1: There is a positive relationship between the level of cultural capital and autonomous motivation.

- H2: There is a negative relationship between the level of cultural capital and controlled motivation.

Both autonomous and controlled motivation exist in a mediating form; however, there is no empirical evidence of this mediating role (Duda *et al*., 2014; Teixeira *et al*., 2020). Studies of controlled motivation revealed a negative correlation with positive behaviour modification, (Ryan *et al*., 2008; Williams *et al*., 2002; Orsini *et al*., 2016). Consequently, this study proposes the following two hypotheses:

- H3: There is a positive relationship between autonomous motivation and smoking cessation.

- H4: There is a negative relationship between controlled motivation and smoking cessation.

Finally, individuals who possessed a higher degree of cultural capital were more likely to engage in health-related behaviours (Doblyt, 2019) and the accumulation of such capital

led to improved health outcomes (Khawaja and Mowafi 2006). Based on this, this study proposes the following:

- H5: There is a positive relationship between the level of cultural capital and smoking cessation.

The conceptual framework of this study is illustrated below in Figure 2:

[Insert Figure 2 here]

4.0 Research Methods

Quantitative approaches can make strong claims about the reliability, usefulness, and objectivity of knowledge (Benton and Craib, 2001). The quantitative analysis could also assess the predictive capacity of the chosen variables (Ivankova *et al*., 2006). Since this study aims to test the relationships between constructs (e.g., how much of the cultural capital influences different motivational forms), it is appropriate to adopt the quantitative method. Another rationale is that social marketing studies dominantly used the qualitative method (Bhat, Darzi and Hakim, 2019; French and Gordon, 2020). Sieben and Lechner (2019) suggested that using quantitative methodologies could contribute to the field of social marketing. Additionally, the lack of empirical evidence for Cultural Capital (Sieben and Lechner, 2019) provided an opportunity for the discipline to benefit from more empirically based quantitative approaches.

The primary objective of this paper is to study the cessation process of ex-smokers who have successfully ceased smoking. Based on the suggestion of Hair *et al*. (2011), this study collected 569 valid online questionnaires. Online survey is considered faster and more accurate than paper and pencil surveys, (Gravlee, 2002). A random sampling approach was first employed to enhance sample diversity (Kirchherr and Charles, 2018), and afterwards, a snowball sampling approach was used based on the contacts from the identified random sample. Although Egypt has high rates of underage smoking, surveying respondents who are younger than 18 is problematic, thus, this study only approached adults.

4.1 Data collection tool development

The study incorporated established measures with a minimum Cronbach alpha of 0.7 from the existing literature to reduce method bias (Podsakoff *et al*., 2003). Table 1 shows the details of the scale used in this study. Cultural capital, autonomous motivation and controlled motivation were measured based on the 7-point Likert scale. Smoking cessation

was assessed by the cessation period of continuous abstinence. The scales were translated into Arabic using two rounds of backward translation in collaboration with a governmental translation institute. Academic experts checked the survey questions before a pilot phase (N=53) using the snowball sampling method. Cronbach's alpha of the gathered data was 0.862, which is higher than 0.70, indicating data are credible and consistent.

[Insert Table 1 here]

4.2 Data Analysis

The study used AMOS software to analyse the data, following a two-stage process suggested by Anderson and Gerbing (1988). The measurement model, or a confirmatory factor analysis (CFA), was first conducted to test the reliability and validity of the measurement model, and then Structural Equation Modelling (SEM) was implemented.

5.0 Results

Table 2 shows the demographic background of the respondents; 72.2% of them are men; 25.8% of them fall in the age group of 23 to 28. The respondents are mainly from Cairo, the capital city of Egypt. Most of them have graduate degrees, and half of them are professionals. The entire sample consists of ex-smokers who have successfully stopped smoking. The sample characteristics are illustrated below in Table 2:

[Insert Table 2 here]

5.1 *Measurement Model*

The results of the measurement model (N = 569) show a good model fit (goodness-of-fit index: χ^2 = 35.78, df = 12, χ^2/df = 2.98, CFI = 0.927, TLI = 0.987, IFI = 0.931, RMSEA = 0.032). Table 3 presents the reliability and validity of the constructs. In this study, Cronbach's alpha reflects the good reliability of the constructs as they ranged from 0.719 to 0.927. Furthermore, the composite reliability checks the internal consistency of measurement scales. All composite reliability of constructs was greater than 0.7, which is above the acceptable level as indicated in the literature (Hair et al., 1995; Devellis, 2003).

This study also checked the average variance extracted (AVE), which is a measurement of the amount of variation recorded by a construct in relation to the amount of variance related to measurement error (dos Santos and Cirillo, 2021). According to Hair *et al.* (2022), an AVE of 0.50 is the minimal acceptable threshold, which could demonstrate the consistency of the data. The results of reliability and validity tests are illustrated below in Table 3:

[Insert Table 3 here]

5.2 SEM and Hypothesis Testing

The model fit for SEM is satisfactory (goodness-of-fit index: $\chi^2 = 28.56$, $df = 6$, $\chi^2/df = 4.76$, CFI = 0.915, TLI = 0.991, IFI = 0.947, RMSEA = 0.022). As shown in Table 4, the results of H2 and H4 demonstrate positive relationships; however, the original H2 and H4 had negative effects. Therefore, both H2 and H4 were rejected. The remaining hypotheses of H1, H3, and H5 were supported. Figure 2 also demonstrates the effect sizes of all paths in this paper. Cohen (1988) considered 0.10 a small effect size, 0.30 a medium effect size, and 0.50 a large effect size. Accordingly, the effect size of H1 and H3 in this paper is small, and the effect size of H5 is large.

[Insert Table 4 here]

[Insert Figure 3 here]

6.0 Conclusions and Discussions

The results show that CC only influenced autonomous motivation, not controlled motivation. More specifically, it increased autonomous motivation by a small effect size of 0.15. This finding illustrated that the acquisition of CC through social interactions and the development of cultural skills in an individual's life are more likely to enhance a smoker's autonomous motivation.

CC positively correlated with smoking cessation, with an effect size of 0.47. This showed a positive correlation between reading proficiency, literature appreciation, instrumental object ownership, musical activity participation, fluency in a foreign language and successful smoking cessation. This finding is consistent with previous studies on health-related behaviours such as perceived health in Lebanon (Khawaja and Mowafi, 2006, 2007), mental health in England (Billings and Young, 2021), reduction of smoking in China (Xu & Jiang, 2020), and eating, smoking, and drinking patterns in Italy (Oncini and Guetto, 2017).

Autonomous motivation impacted smoking cessation with an effect size of 0.16, but not controlled motivation. This result supports previous studies in which controlled motivation did not affect smoking cessation (Deci and Ryan, 2000; Hagger and Hamilton, 2020; Brunet *et al*., 2015; Fernández Espnola *et al*., 2020). This conclusion can be considered rational given the context of operating inside a collectivist culture. Additionally, there might be a positive indirect effect of cultural capital on cessation via autonomous motivation (0.024). The results also showed that controlled motivation is unlikely to be a mediator, as H2 and H4 were rejected. The results of this study support Duncan *et al*.

(2015) that there is a mediation effect between autonomous motivation and physical activity but no mediation between controlled motivation and physical activity. Two possible explanations link CC and smoking cessation in Egypt. First, the socialisation process of accumulating cultural capital, during which people gain values, skills, and new ideas regarding smoking's health dangers, may help them stop (Gagné *et al.,* 2015). The alternative explanation is that reading and visiting museums help former smokers through their depressive periods, which are usually connected with quitting smoking (Clancy *et al*., 2013). This study found that CC affected smoking cessation behaviour mainly for autonomous motivation, which is related to internal motivation, making it an overlooked health indicator in Egypt.

7.0 Original Contributions, Limitations and Policy Implications

This paper adds empirical support for SDT in the smoking cessation area, where a void exists (Sheeran *et al*., 2020; Ntoumanis *et al*., 2020). To the authors' knowledge, this is the first study to theoretically and empirically evaluate cultural capital accumulation on self-determined motivating forms in the context of smoking cessation behaviour. This permits SDT to be used in instances where it failed due to criticism of three basic needs that could be insufficient in terms of considering cultural differences (Duda *et al*., 2014; Knox *et al*., 2021; Gillison *et al*., 2013). There have been limited attempts to explore CC concerning social marketing. For example, Spotswood and Tapp (2013) qualitatively examined the notion, however, they only included the embodied dimension in physical activity. Unlike the present study, which provided empirical evidence, Kamin and Anker (2014) only theoretically examined how CC may be introduced by utilising the three aspects of capital.

According to Truong (2016), it is imperative to incorporate a social and cultural framework when addressing behavioural change in social marketing. The findings support the claim that social marketing strategies must deviate from 'individualistic epidemiology' and instead prioritise the allocation of resources for external factors that contribute to an individual's development, such as acquiring and enhancing cultural capital. Therefore, the study adds evidence to support advocacy for policy measures that increase and encourage individuals to accumulate cultural capital. Social marketing professionals need to have a full understanding of the value of cultural capital accumulation and how individuals use it to influence their behaviours. Our study provided direct empirical evidence to support that cultural capital could independently affect not only behavioural change but sustained behavioural change. In our study's context, cultural capital accumulation has contributed to the successful smoking cessation of Egyptian ex-smokers. This significant finding has important policy implications. Egypt should invest more in cultural activities, such as music, art, literature and languages. This investment could benefit both parties because cultural capital owners could be successful at promoting tourist services (Quaglione *et al*., 2020), one of the world's most important industries (Baalbaki and Zizka, 2023).

Institutionalised cultural capital could also play an important role. Investing in educational establishments such as universities could upskill the Egyptian smoking population and contribute to societal wellbeing that helps them successfully quit smoking.

Although the context of this study is only focused on Egypt, it could shed light on successful smoking cessation, which is a global challenge. Governments around the world could draw inspiration from this, alongside other public policy interventions such as smoking bans in public venues and packaging warning labels. Investing in culture and education is worthwhile, perhaps even in the most challenging economic realities. Cultural activities and educational establishments are not only sources of income and employment but also crucial enablers of better and healthier societal wellbeing. They could help individuals acquire new skills but also contribute to healthier lifestyle choices, such as successful and sustained smoking cessation.

References

Abd ElWahab, E. (2021). Attributes of smoking cessation in the Egyptian community: dependence matters. *Journal Of Public Health*, *29*(6), 13791389.

Abdelazim, S., NourEldein, H., Ismail, M., Al Sayed Fiala, L., and Abdulmajeed, A. (2018). Effect of training program regarding smoking cessation counseling for primary health care physicians in Port Said City, Egypt. *Journal Of Public Health*, *26*(5), 569575.

Abo-Elkheir, O. I., & Sobh, E. (2016). Knowledge about electronic cigarettes and its perception: a community survey, Egypt. *Respiratory research*, *17*(1), 58. https://doi.org/10.1186/s12931-016-0365-0

Ahmadi, A., Noetel, M., Parker, P., Ryan, R. M., Ntoumanis, N., Reeve, J., Beauchamp, M., Dicke, T., Yeung, A., Ahmadi, M., Bartholomew, K., Chiu, T. K. F., Curran, T., Erturan, G., Flunger, B., Frederick, C., Froiland, J. M., González-Cutre, D., Haerens, L., . . . Lonsdale, C. (2023, May 18). A classification system for teachers' motivational behaviors recommended in self-determination theory interventions. *Journal of Educational Psychology*. https://doi.org/10.1037/edu0000783

Anderson, J.C. and Gerbing, D.W. (1988), "*Structural equation modeling in practice: a review and recommended two-step approach*", Psychological Bulletin, Vol. 103 No. 3, pp. 411-423.

Baalbaki, J., & Zizka, L. (2023, March 17). Egyptian crises and destination brand image: the resurrection of the mummy. *Current Issues in Tourism*, 1–19. https://doi.org/10.1080/13683500.2023.2187280

Bader, R., Shihab, R., AlRimawi, D., and Hawari, F. (2018). Pictorial warning labels in Jordan: are we maximizing the benefit for smokers? *Tobacco Induced Diseases*, *16*(1).

Bagozzi, R.P. and Yi, Y. (2012), "*Specification, evaluation, and interpretation of structural equation models*", Journal of the Academy of Marketing Science, Vol. 40 No. 1, pp. 8-34.

Baxter, D. E., & Pelletier, L. G. (2019). Is nature relatedness a basic human psychological need? A critical examination of the extant literature. *Canadian Psychology/Psychologie canadienne*, *60*(1), 21–34. https://doi.org/10.1037/cap0000145

Bhat, S. A., Darzi, M. A., & Hakim, I. A. (2019). Understanding Social Marketing and Well-being: A Review of Selective Databases. *Vikalpa: The Journal for Decision Makers*, *44*(2), 75–87. https://doi.org/10.1177/0256090919861010

Billings, K. R., & Young, K. M. (2021). How Cultural Capital Shapes Mental Health Care Seeking in College. *Sociological Perspectives*, 073112142110428. https://doi.org/10.1177/07311214211042856

Bourdieu, P. (1977). The economics of linguistic exchanges. *Social Science* Social Science Information, 16(6), 645-668.

Bourdieu, P. (1986). The forms of capital. In: Richardson, J., Handbook of Theory and Research for the Sociology of Education.

Chao, R. K., & Tseng, V. (2002). Asian and American parenting. *Handbook of parenting*, *4*, 59-93.

Cheung, K. L., Eggers, S. M., & de Vries, H. (2020). Combining the Integrated-Change Model with Self-Determination Theory: Application in Physical Activity. *International Journal of Environmental Research and Public Health*, *18*(1), 28. https://doi.org/10.3390/ijerph18010028

Cheung, K. L., Eggers, S. M., & de Vries, H. (2020). Combining the Integrated-Change Model with Self-Determination Theory: Application in Physical Activity. *International Journal of Environmental Research and Public Health*, *18*(1), 28. https://doi.org/10.3390/ijerph18010028

Clancy, N., Zwar, N., & Richmond, R. (2013, July 8). Depression, smoking and smoking cessation: a qualitative study. *Family Practice*, *30*(5), 587–592. https://doi.org/10.1093/fampra/cmt032

CLAUSSEN, S., & OSBORNE, J. (2012, December 18). Bourdieu's notion of cultural capital and its implications for the science curriculum. *Science Education*, *97*(1), 58–79. https://doi.org/10.1002/sce.21040

Cohen, 1988, J. Cohen Statistical power analysis for the behavioural sciences (2nd ed.), Erlbaum, Hillsdale, NJ (1988)

Cunningham, I., Willetts, J., Winterford, K., & Foster, T. (2021). Interrogating the motivation mechanisms and claims of asset-based community development with self-determination theory. *Community Development*, 1–20. https://doi.org/10.1080/15575330.2021.1953089

Damianus Abun, Theogenia Maggalanez. Psychological need satisfaction at work of faculty and employees of divine word colleges in region I, Philippine and their work engagement. Swiss Medical Weekly, EMH Swiss Medical Publishers, 2017, Psychological need satisfaction at work of faculty and employees of divine word colleges in region I, Philippine and their work engagement, 4 (3), pp.2130.

Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian psychology/Psychologie canadienne*, *49*(3), 182.

Deci, E. L., & Ryan, R. M. (2012). Self-determination theory. *Handbook of theories of social psychology*, *1*(20), 416-436.

Deci, E., & Ryan, R. (1985). The general causality orientations scale: Self-determination in personality. *Journal Of Research In Personality*, *19*(2), 109-134. doi: 10.1016/0092-6566(85)90023-6

Doblytė, S. (2019). Bourdieu's theory of fields: towards understanding help-seeking practices in mental distress. *Social Theory & Health*, *17*(3), 273-290. doi: 10.1057/s41285-019-00105-0

Duda, J. L., Williams, G. C., Ntoumanis, N., Daley, A., Eves, F. F., Mutrie, N., Rouse, P. C., Lodhia, R., Blamey, R. V., & Jolly, K. (2014). Effects of a standard provision versus an autonomy supportive exercise referral programme on physical activity, quality of life and well-being indicators: a cluster randomised controlled trial. *International Journal of Behavioral Nutrition and Physical Activity*, *11*(1), 10. https://doi.org/10.1186/1479-5868-11-10

Duncan MJ, Eyre EL, Bryant E, Seghers J, Galbraith N, Nevill AM. Autonomous motivation mediates the relation between goals for physical activity and physical activity behavior in adolescents. *Journal of Health Psychology*. 2017;22(5):595-604. doi:10.1177/1359105315609089

Elsaid, E., & Elsaid, A. M. (2012). Culture and Leadership: Comparing Egypt to the GLOBE Study of 62 Societies. *Business and Management Research*, *1*(2). https://doi.org/10.5430/bmr.v1n2p1

Emirbayer, M., and Williams, E. (2005). Bourdieu and Social Work. *Social Service Review*, *79*(4), 689724.

Escriva-Boulley, G., Tessier, D., Ntoumanis, N., & Sarrazin, P. (2018). Need-supportive professional development in elementary school physical education: Effects of a cluster-randomized control trial on teachers' motivating style and student physical activity. *Sport, Exercise, and Performance Psychology*, *7*(2), 218–234. https://doi.org/10.1037/spy0000119

Fernández-Espínola, C., Almagro, B. J., Tamayo-Fajardo, J. A., & Sáenz-López, P. (2020). Complementing the Self-Determination Theory With the Need for Novelty: Motivation and Intention to Be Physically Active in Physical Education Students. *Frontiers in Psychology*, *11*. https://doi.org/10.3389/fpsyg.2020.01535

Fouda, S., Kelany, M., Moustafa, N., Abushouk, A., Hassane, A., and Sleem, A. et al. (2018). Tobacco smoking in Egypt: a scoping literature review of its epidemiology and control measures. *Eastern Mediterranean Health*

Gagné, T., Frohlich, K. L., & Abel, T. (2015, April 9). Cultural capital and smoking in young adults: applying new indicators to explore social inequalities in health behaviour. *The European Journal of Public Health*, *25*(5), 818–823. https://doi.org/10.1093/eurpub/ckv069

Gillison, F., Standage, M., & Skevington, S. (2013, May). The effects of manipulating goal content and autonomy support climate on outcomes of a PE fitness class. *Psychology of Sport and Exercise*, *14*(3), 342–352. https://doi.org/10.1016/j.psychsport.2012.11.011

Ginevra, M. C., Nota, L., Soresi, S., Shogren, K. A., Wehmeyer, M. L., & Little, T. D. (2013). A cross-cultural comparison of the self-determination construct in Italian and American adolescents. *International Journal of Adolescence and Youth*, *20*(4), 501–517. https://doi.org/10.1080/02673843.2013.808159

González-Cutre, D., Sicilia, Á., Sierra, A. C., Ferriz, R., & Hagger, M. S. (2016). Understanding the need for novelty from the perspective of self-determination theory. *Personality and Individual Differences*, *102*, 159–169. https://doi.org/10.1016/j.paid.2016.06.036

Gravlee, C. C. (2002). Mobile Computer-Assisted Personal Interviewing with Handheld Computers: The Entryware System 3.0. *Field Methods*, *14*(3), 322–336. https://doi.org/10.1177/1525822X0201400305

Hagger, M. S., & Hamilton, K. (2020a). General causality orientations in self-determination theory: Meta-analysis and test of a process model. *European Journal of Personality*, 1–26. https://doi.org/10.1177/0890207020962330

Hair, J.F., Ringle, C.M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. The Journal of Marketing Theory and Practice, 19(2), 139-152

Hampton-Garland, Pamela (2015). "The Influence of Embodied Cultural Capital on the Retention and Matriculation Adults Entering College," Adult Education Research Conference.

Hashemi, N., Sebar, B., & Harris, N. (2018). The relationship between cultural capital and lifestyle health behaviours in young people: a systematic review. *Public Health*, *164*, 57–67. https://doi.org/10.1016/j.puhe.2018.07.020

Huang, J., Yuan, Y., & Wetter, D. (2019). Latent Class Dynamic Mediation Model with Application to Smoking Cessation Data. *Psychometrika*, *84*(1), 1–18. https://doi.org/10.1007/s11336-018-09653-2

inxten, W. and Lievens, J. (2014), The importance of economic, social and cultural capital in understanding health inequalities: using a Bourdieu-based approach in research on physical and mental health perceptions. Sociol Health Illn, 36: 1095-1110. https://doi.org/10.1111/1467-9566.12154

Jaakkola, T., Liukkonen, J., Laakso, T., & Ommundsen, Y. (2008). The relationship between situational and contextual self-determined motivation and physical activity intensity as measured by heart rates during ninth grade students' physical education classes. *European Physical Education Review*, *14*(1), 13–31. https://doi.org/10.1177/1356336X07085707

Jang, H., Reeve, J., Ryan, R. M., & Kim, A. (2009). Can self-determination theory explain what underlies the productive, satisfying learning experiences of collectivistically oriented Korean students? *Journal of Educational Psychology*, *101*(3), 644–661. https://doi.org/10.1037/a0014241

Kamin, T., & Anker, T. (2014, July 1). Cultural capital and strategic social marketing orientations. *Journal of Social Marketing*, *4*(2), 94–110. https://doi.org/10.1108/jsocm-08-2013-0057

Kaplan, H., & Madjar, N. (2017). The Motivational Outcomes of Psychological Need Support among Pre-Service Teachers: Multicultural and Self-determination Theory Perspectives. *Frontiers in Education*, *2*. https://doi.org/10.3389/feduc.2017.00042

Khawaja, M., & Mowafi, M. (2006). Cultural Capital and Self-Rated Health in Low Income Women: Evidence from the Urban Health Study, Beirut, Lebanon. *Journal of Urban Health*, *83*(3), 444–458. https://doi.org/10.1007/s11524-006-9051-8

Khawaja, M., & Mowafi, M. (2007). Types of cultural capital and self-rated health among disadvantaged women in outer Beirut, Lebanon. *Scandinavian Journal of Public Health*, *35*(5), 475–480. https://doi.org/10.1080/14034940701256958

Kim H.J., Park J., Park M.S. (2020) A Study on the Effect of Cultural Capital on the Innovative Behavior. In: Lee R. (eds) Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing. SNPD 2019. Studies in Computational Intelligence, vol 850. Springer, Cham. https://doi.org/10.1007/978-3-030-26428-4_15

Kim, H. J., Park, J., & Park, M. S. (2020). A Study on the Effect of Cultural Capital on the Innovative Behavior. *Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing*, 227-246.

Kirchherr J, Charles K (2018) Enhancing the sample diversity of snowball samples: Recommendations from a research project on anti-dam movements in Southeast Asia. PLoS ONE 13(8): e0201710. https://doi.org/10.1371/journal.pone.0201710

Knox, L., Norris, G., Lewis, K., & Rahman, R. (2021, January 1). Using self-determination theory to predict self-management and HRQoL in moderate-to-severe COPD. *Health Psychology and Behavioral Medicine*, *9*(1), 527–546. https://doi.org/10.1080/21642850.2021.1938073

Kraaykamp, G., & van Eijck, K. (2010). The Intergenerational Reproduction of Cultural Capital: A Threefold Perspective. *Social Forces*, *89*(1), 209–231. https://doi.org/10.1353/sof.2010.0087

Kubacki, K., & Rundle-Thiele, S. (Eds.). (2016). *Formative research in social marketing: Innovative methods to gain consumer insights*. Springer.

Kwasnicka, D., Dombrowski, S., White, M., and Sniehotta, F. (2016). Theoretical explanations for maintenance of behaviour change: a systematic review of behaviour theories. *Health Psychology Review*, *10*(3), 277296.

Lamont, M., & Lareau, A. (1988). Cultural capital: Allusions, gaps and glissandos in recent theoretical developments. *Sociological theory*, 153-168.

Laporte, N., Soenens, B., Brenning, K., & Vansteenkiste, M. (2021). Adolescents as active managers of their own psychological needs: The role of psychological need crafting in adolescents' mental health. *Journal of Adolescence*, *88*, 67–83. https://doi.org/10.1016/j.adolescence.2021.02.004

Lee, C. W., & Kahende, J. (2007). Factors associated with successful smoking cessation in the United States, 2000. *American journal of public health*, *97*(8), 1503–1509. https://doi.org/10.2105/AJPH.2005.083527

Lee, S., Chung, J. E., & Park, N. (2016). Linking cultural capital with subjective well-being and social support: The role of communication networks. *Social Science Computer Review*, *34*(2), 172-196.

Legault, L. (2017). Self-Determination Theory. In V. Zeigler-Hill & T. Shackelford (Eds.), Encyclopedia of Personality and Individual Differences. Springer. https://doi.org/10.1007/978-3-319-28099-8_1162-1

Li, W. H. C., Ho, K. Y., Wang, M. P., Cheung, D. Y. T., Lam, K. K. W., Xia, W., Cheung, K. Y., Wong, C. K. H., Chan, S. S. C., & Lam, T. H. (2020, February 1). Effectiveness of a Brief Self-determination Theory–Based Smoking Cessation Intervention for Smokers at Emergency Departments in Hong Kong. *JAMA Internal Medicine*, *180*(2), 206. https://doi.org/10.1001/jamainternmed.2019.5176

Li, W. H. C., Ho, K. Y., Wang, M. P., Cheung, D. Y. T., Lam, K. K. W., Xia, W., Cheung, K. Y., Wong, C. K. H., Chan, S. S. C., & Lam, T. H. (2020). Effectiveness of a Brief Self-determination Theory–Based Smoking Cessation Intervention for Smokers at Emergency Departments in Hong Kong. *JAMA Internal Medicine*, *180*(2), 206. https://doi.org/10.1001/jamainternmed.2019.5176

Liebmann, E. P., Preacher, K. J., Richter, K. P., Cupertino, A. P., & Catley, D. (2019, July). Identifying pathways to quitting smoking via telemedicine-delivered care. *Health Psychology*, *38*(7), 638–647. https://doi.org/10.1037/hea0000740

Lim, J. H., & Ha, Y. (2019, February). Effectiveness of a Workplace Smoking Cessation Program based on Self-determination Theory Using Individual Counseling and Tailored Text Messaging: A Pilot Study. *Asian Nursing Research*, *13*(1), 53–60. https://doi.org/10.1016/j.anr.2019.01.004

Mahar, C., Harker, R., & Wilkes, C. (1990). *An Introduction to the Work of Pierre Bourdieu: The Practice of Theory*. Palgrave MacMillan.

Martela, F., Hankonen, N., Ryan, R. M., & Vansteenkiste, M. (2021). Motivating voluntary compliance to behavioural restrictions: Self-determination theory–based checklist of principles for COVID-19 and other emergency communications. *European Review of Social Psychology*, *32*(2), 305-347.

Martela, F., & Riekki, T. J. J. (2018). Autonomy, Competence, Relatedness, and Beneficence: A Multicultural Comparison of the Four Pathways to Meaningful Work. *Frontiers in Psychology*, *9*. https://doi.org/10.3389/fpsyg.2018.01157

Martins, R., Junaid, M., Khan, M., Aziz, N., Fazal, Z., and Umoodi, M. et al. (2021). Factors motivating smoking cessation: a crosssectional study in a lowermiddleincome country. *BMC Public Health*, *21*(1).

Maslauskaite, A. (2021). Cultural Capital, Gender and Intergenerational Educational Mobility in Post-Communist Space. *Societies*, *11*(1), 4. https://doi.org/10.3390/soc11010004

Miller, L. S., & Gramzow, R. H. (2016). A self-determination theory and motivational interviewing intervention to decrease racial/ethnic disparities in physical activity: rationale and design. *BMC Public Health*, *16*(1). https://doi.org/10.1186/s12889-016-3413-2

Milyavskaya, M., & Koestner, R. (2011). Psychological needs, motivation, and well-being: A test of self-determination theory across multiple domains. *Personality and Individual Differences*, *50*(3), 387–391. https://doi.org/10.1016/j.paid.2010.10.029

NOVISKY, M. A. (2018). Avoiding the runaround: The link between cultural health capital and health management among older presoners. *Criminology*, *56*(4), 643–678. https://doi.org/10.1111/1745-9125.12188

Ntoumanis, N., Ng, J. Y., Prestwich, A., Quested, E., Hancox, J. E., Thøgersen-Ntoumani, C., Deci, E. L., Ryan, R. M., Lonsdale, C., & Williams, G. C. (2020, February 3). A meta-analysis of self-determination theory-informed intervention studies in the health domain: effects on motivation, health behavior, physical, and psychological health. *Health Psychology Review*, *15*(2), 214–244. https://doi.org/10.1080/17437199.2020.1718529

Oberleiter, S., Wainig, H., Voracek, M., & Tran, U. S. (2022, August 24). No Effects of a Brief Mindfulness Intervention on Controlled Motivation and Amotivation, but Effect Moderation Through Trait Mindfulness: a Randomized Controlled Trial. *Mindfulness*, *13*(10), 2434–2447. https://doi.org/10.1007/s12671-022-01968-7

Ohajunwa, C., & Mji, G. (2018). The African Indigenous Lens of Understanding Spirituality: Reflection on Key Emerging Concepts from a Reviewed Literature. *Journal of religion and health*, *57*(6), 2523–2537. https://doi.org/10.1007/s10943-018-0652-9

Ohashi, Y., Taguchi, A., Omori, J., & Ozaki, A. (2017). Cultural Capital: A Concept Analysis. *Public Health Nursing*, *34*(4), 380–387. https://doi.org/10.1111/phn.12319

Olafsen, A., Halvari, H., & Frølund, C. (2021). The Basic Psychological Need Satisfaction and Need Frustration at Work Scale: A Validation Study. Frontiers In Psychology, 12.

Oncini, F., & Guetto, R. (2017). Cultural capital and gender differences in health behaviours: a study on eating, smoking and drinking patterns. *Health Sociology Review*, *27*(1), 15–30. https://doi.org/10.1080/14461242.2017.1321493

Orsini, C., Binnie, V. I., & Wilson, S. L. (2016). Determinants and outcomes of motivation in health professions education: a systematic review based on self-determination theory. *Journal of Educational Evaluation for Health Professions*, *13*, 19. https://doi.org/10.3352/jeehp.2016.13.19

Prieur, A., & Savage, M. (2011). Updating cultural capital theory: A discussion based on studies in Denmark and in Britain. *Poetics*, *39*(6), 566–580. https://doi.org/10.1016/j.poetic.2011.09.002

Quaglione, D., Crociata, A., Agovino, M., & Iaia, L. (2020, January). Cultural capital and online purchase of tourism services. *Annals of Tourism Research*, *80*, 102797. https://doi.org/10.1016/j.annals.2019.102797

Raissa, G., Sihotang, S., Christy, F., & Wijaya, K. (2021, May 1). Identification of cultural capital and sustainable behavior towards sustainable development. *IOP Conference Series: Earth and Environmental Science*, *764*(1), 012015. https://doi.org/10.1088/1755-1315/764/1/012015

RIJAVEC, M., BRDAR, I., & MILJKOVIĆ, D. (2011). ASPIRATIONS AND WELL-BEING: EXTRINSIC VS. INTRINSIC LIFE GOALS. *Drustvena istrazivanja*, *20*(3 (113)), 693–710. https://doi.org/10.5559/di.20.3.05

Ryan, R. M., & Deci, E. L. (2017). Self-determination theory: Basic psychological needs in motivation, development, and wellness. New York: Guilford Publishing

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68–78. https://doi.org/10.1037/0003-066x.55.1.68

Ryan, R. M., Soenens, B., & Vansteenkiste, M. (2019). Reflections on self-determination theory as an organizing framework for personality psychology: Interfaces, integrations, issues, and unfinished business. *Journal of Personality*, *87*(1), 115–145. https://doi.org/10.1111/jopy.12440

Sharyn Rundle-Thiele, Patricia David, Taylor Willmott, Bo Pang, Lynne Eagle & Rachel Hay (2019) Social marketing theory development goals: an agenda to drive change, Journal of Marketing Management, 35:1-2, 160-181, DOI: 10.1080/0267257X.2018.1559871

Sheeran, P., Wright, C. E., Avishai, A., Villegas, M. E., Lindemans, J. W., Klein, W. M. P., Rothman, A. J., Miles, E., & Ntoumanis, N. (2020, August). Self-determination theory interventions for health behavior change: Meta-analysis and meta-analytic structural equation modeling of randomized controlled trials. *Journal of Consulting and Clinical Psychology*, *88*(8), 726–737. https://doi.org/10.1037/ccp0000501

Spotswood, F., & Tapp, A. (2013, October 7). Beyond persuasion: a cultural perspective of behaviour. *Journal of Social Marketing*, *3*(3), 275–294. https://doi.org/10.1108/jsocm-01-2013-0006

Steel, R. P., Bishop, N. C., & Taylor, I. M. (2021, August 8). The effect of autonomous and controlled motivation on self-control performance and the acute cortisol response. *Psychophysiology*, *58*(11). https://doi.org/10.1111/psyp.13915

Teixeira, D. S., Pelletier, L. G., Monteiro, D., Rodrigues, F., Moutão, J., Marinho, D. A., & Cid, L. (2020). Motivational patterns in persistent swimmers: A serial mediation analysis. *European journal of sport science*, *20*(5), 660-669.

Truong, V. D. (2016, July 28). Government-led Macro-social Marketing Programs in Vietnam. *Journal of Macromarketing*, *37*(4), 409–425. https://doi.org/10.1177/0276146716660833

Truong, V. D., & Dang, N. V. (2017). Reviewing research evidence for social marketing: Systematic literature reviews. *Formative research in social marketing: Innovative methods to gain consumer insights*, 183-250.

Van den Broeck, A., Ferris, D., Chang, C., & Rosen, C. (2016). A Review of Self-Determination Theory's Basic Psychological Needs at Work. Journal Of Management, 42(5), 1195-1229.

Vansteenkiste, M., Ryan, R.M. & Soenens, B. Basic psychological need theory: Advancements, critical themes, and future directions. *Motiv Emot* 44, 1–31 (2020). https://doi.org/10.1007/s11031-019-09818-1

Vassenden, A., & Jonvik, M. (2018). Cultural Capital as a Hidden Asset: Culture, Egalitarianism and Inter-Class Social Encounters in Stavanger, Norway. *Cultural Sociology*, *13*(1), 37–56. https://doi.org/10.1177/1749975518782244

Wang, S., Li, L., Zhang, J., and Rehkopf, D. (2021). Leisure time activities and biomarkers of chronic stress: The mediating roles of alcohol consumption and smoking. *Scandinavian Journal of Public Health*, *49*(8), 940950.

Wang, C. K. J., Liu, W. C., Kee, Y. H., & Chian, L. K. (2019). Competence, autonomy, and relatedness in the classroom: understanding students' motivational processes using the self-determination theory. *Heliyon*, *5*(7), Article e01983. https://doi.org/10.1016/j.heliyon.2019.e01983

Wannheden, C., Stenfors, T., Stenling, A., & von Thiele Schwarz, U. (2021). Satisfied or Frustrated? A Qualitative Analysis of Need Satisfying and Need Frustrating Experiences of Engaging With Digital Health Technology in Chronic Care. *Frontiers in Public Health*, *8*. https://doi.org/10.3389/fpubh.2020.623773

Williams, G. C., Minicucci, D. S., Kouides, R. W., Levesque, C. S., Chirkov, V. I., Ryan, R. M., & Deci, E. L. (2002). Self-determination, smoking, diet and health. *Health education research*, *17*(5), 512-521.

Yong, H. H., Borland, R., Cummings, K. M., & Partos, T. (2018). Do predictors of smoking relapse change as a function of duration of abstinence? Findings from the United States, Canada, United Kingdom and Australia. *Addiction (Abingdon, England)*, *113*(7), 1295–1304. https://doi.org/10.1111/add.1418

Zeigler-Hill, V., and Shackelford, T. (2020). *Encyclopedia of Personality and Individual Differences*. Springer International Publishing.

Zhang, C., Lakens, D., & IJsselsteijn, W. A. (2021). Theory Integration for Lifestyle Behavior Change in the Digital Age: An Adaptive Decision-Making Framework. *Journal of Medical Internet Research*, *23*(4), Article e17127. https://doi.org/10.2196/17127

List of Tables

Table 1: Sources of Questionnaire Items

Construct	Items	Sources
Autonomous and Controlled Motivation	The following question relates to the reasons why you would continue not smoking. • Because I feel that I want to take responsibility for my health. • Because I would feel guilty or ashamed of myself if I smoked. • Because I believe it is the best thing for my health. • Because others would be upset with me if I smoked. • I don't think about it. • Because I have carefully thought about it and believe it is very important for many aspects of my life. • Because I would feel bad about myself if I smoked. • Because it is an important choice I really want to make. • Because I feel pressure from others to not smoke. • Because it is easier to do what I am told than think about it. • Because it is consistent with my life goals. • Because I want others to approve of me. • Because it is very important for being as healthy as possible. • Because I want others to see I can do it. • I don't really know why.	Liebmann et al., 2019; Williams et al., 2002.
Cultural Capital	• I enjoy reading literature. • I know a lot about literature (music, art, restaurants, sports, magazines). • I enjoy reading (in general). • I frequently speak with others about art, culture and books. • I play a musical instrument, writing texts or creating visual arts. • I understand music well; so, I am a cultured person. • I know all the famous music composers. • I frequently attend cultural events (e.g., theatre, concert, cabaret, ballet, exhibitions, museums, cinema) • I like to attend symphony concerts. • I like to take art, music or religious classes.	Paccoud, Nazroo and Leist, 2019; Pinxten and Lievens, 2014; Veenstra, 2007.

	• I am highly proficient in using a foreign language. • I have my own computer and internet access. • I have a membership of a public library. • I frequently read books. • I have lots of different books at home (e.g. Poetry, classic literature). • I own a work of art (paintings). • I own a musical instrument at home.	
Smoking Cessation (Quitting Status)	• I quitted smoking cigarettes for less than 7 months and didn't relapse. • I quitted smoking cigarettes for more than 7 months and didn't relapse. • I quitted smoking cigarettes for more than 12 months and didn't relapse. • I quitted smoking cigarettes for more than 18 months and didn't relapse • I quitted smoking cigarettes for more than 24 months and didn't relapse.	Lee and Kahende, 2007

Table 2: Sample Characteristics

Variables	N (Total 569)	%
Gender		
Female	158	27.8%
Male	411	72.2%
Age Group		
18-22	75	13.2%
23-28	147	25.8%
29-33	121	21.3%
34-38	86	15.1%
39-44	72	12.7%
45 and above	68	12%
Geographical Area		
Cairo	346	60.8%

Alex	86	15.1%
El-sharqeya	21	3.7%
El-daqahleya	18	3.2%
El-gharbeys	17	3%
Other	81	14.2%
Education Level		
Illiterate	28	4.9%
Literate, less than middle	87	15.3%
Middle school	75	13.2%
High school	128	22.5%
Graduate degree	246	43.2%
Postgraduate	5	0.9%
Educational Level of the Head of Family		
Illiterate	21	3.7%
Literate, less than middle	34	6%
Middle school	71	12.5%
High school	111	19.5%
Graduate degree	300	52.7%
Postgraduate	32	5.6%
Quitting Status		
I quitted smoking cigarettes for less than 7 months and didn't relapse.	16	2.8%
I quitted smoking cigarettes for more than 7 months and didn't relapse.	164	28.8%
I quitted smoking cigarettes for more than 12 months and didn't relapse.	176	30.9%
I quitted smoking cigarettes for more than 18 months and didn't relapse	105	18.5%
I quitted smoking cigarettes for more than 24 months and didn't relapse.	108	19%

Table 3: Reliability and Validity of the Constructs

	Number of items	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Autonomous	8	0.859	0.891	0.619
Controlled	7	0.805	0.894	0.792
Cultural Capital	17	0.927	0.907	0.684
Smoking Cessation	1	0.770	0.756	0.649

Table 4: Results of Hypothesis Testing

Hypothesis	Effect Size	S.E.	C.R.	*p*	Hypothesis results
Cultural Capital → Autonomous	.149	.039	3.584	< .001	H1 is accepted.
Cultural Capital → Controlled	.157	.051	3.795	< .001	H2 is rejected.
Autonomous → Smoking Cessation	.159	.350	4.735	< .001	H3 is accepted.
Controlled → Smoking Cessation	.256	.266	7.600	< .001	H4 is rejected.
Cultural Capital → Smoking Cessation	.470	.333	13.831	< .001	H5 is accepted.

Figure 1: Main Theory Assumption and This Study's Argument

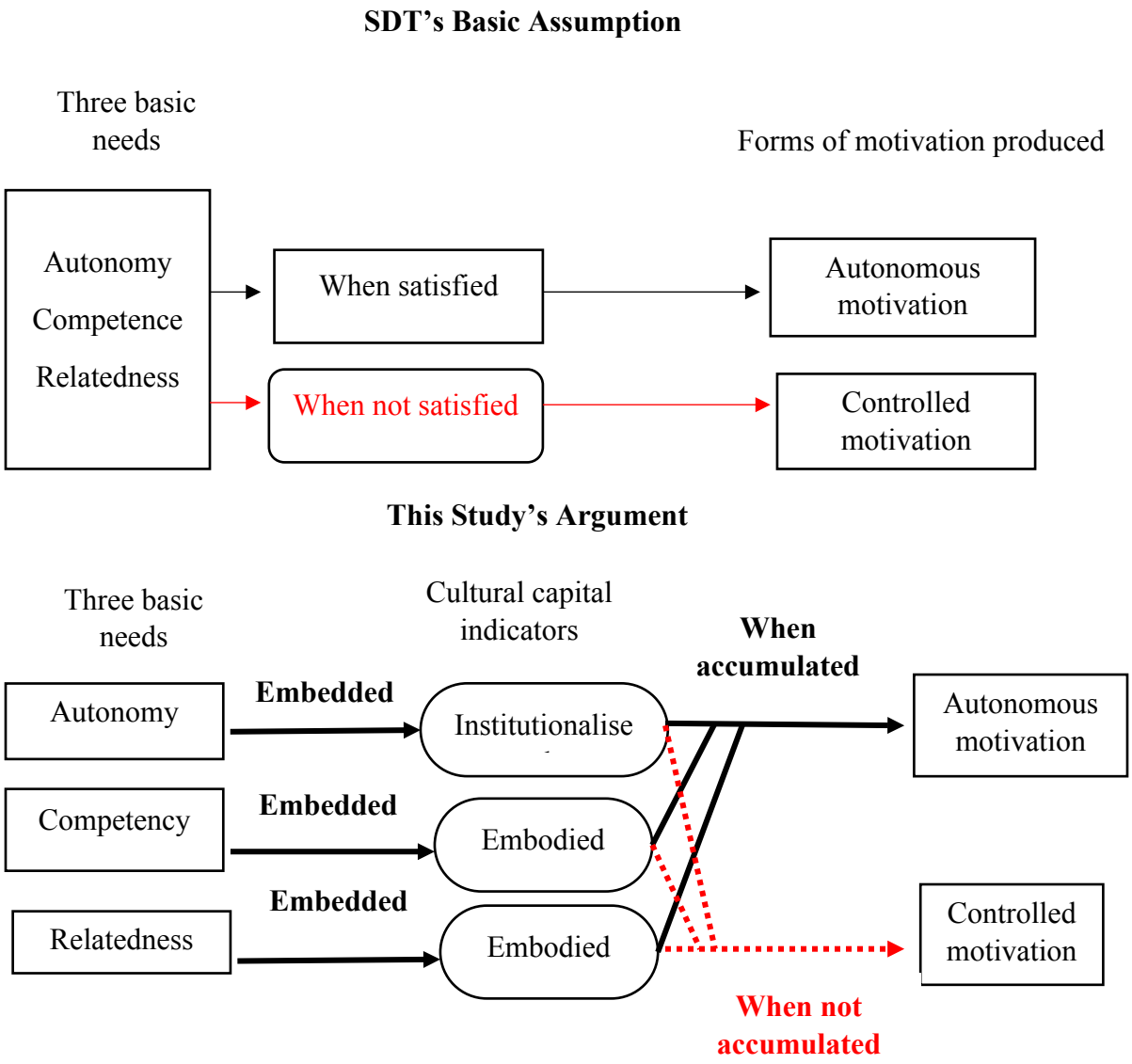

Figure 2: Conceptual Framework

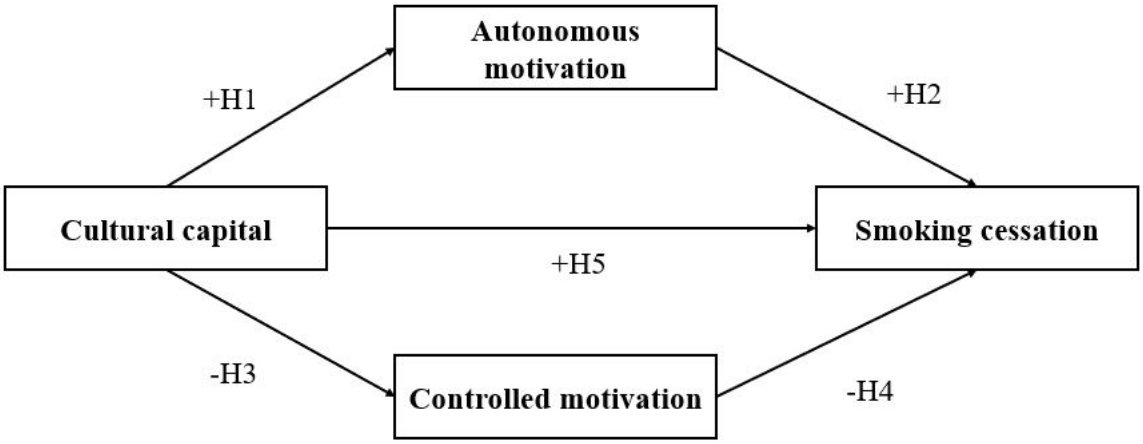

Figure 3: Effect Size of Paths