MANIPULATION OF USER'S BEHAVIOR UNDER "SOCIAL MONITORING" IN TOURIST SERVICES

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Abstract

The influence of many factors determines, along with technological and communications developments, an increase in the speed that is required to solve any task in the time unit. Not in vain, this sense of shortening time was perceived as "Time has no patience with us." Control can give rise to positive or negative effects. When the balance generated by the law that coordinates the processes is influenced by factors that apply control procedures, we can talk about the likelihood of manipulation actions. Can the users of tourist services be manipulated by "social monitoring"? To find the answer to this question we need to find out if we have people who imagine at the theoretical and practical level the study and the application of manipulation theories, legal entities that undertake to provide specific services based on the manipulative control of some target subjects, customers requesting such services and, last but not least, a market to be presented with a portfolio of services verified in practice.

Keywords
Manipulation, Tourism, Monitoring Applications, Potential Tourists, User Generated Content, Tourism 2.0.

JEL Classification
M30; Z32; L83; L86.

Introduction

Individuals use social networking sites and messaging apps to communicate, make payments using online platforms and credit cards, and stream digital media. Additionally, they are virtually inseparable from wearable devices such as fitness trackers and smartphones (Kosinski, Wang, Lakkaraju & Leskovec, 2016).

The evolution of the use of new technologies for tourism is strongly differentiated globally. For example, Barreda and Bilgihan (2013) mentioned: "According to the Pew Internet and American Life Project, exploration of travel information has become one of the most common online activities. Many people use online travel recommendations for travel planning." Observing the period (studies published in 1999), we cannot say the same if we refer to other areas, including Central and Eastern Europe.

Recently, the emergence of Web 2.0 has revolutionized the use of the Internet as a communication channel. The term "Web 2.0" includes a wide range of electronic applications, also called "social media" (e.g. social network sites, recommendation websites, blogs, and photo and video sharing platforms), that facilitate interactions among individuals as well as among users and companies (Herrero Crespo, San Martín Gutiérrez & Hernández Mogollón, 2015).

Frequent travellers are more likely to turn to user-generated content online than other travellers – 61.2% of those who took three or more overnight pleasure trips per year compared with 52.0% of those who took one or two trips (Simms, 2012). In addition, the content published by some users on the social network sites may affect other individuals' attitudes and intentions in a consumption context (Steffes & Burgee, 2009).

1 Literature review

The theme under discussion was addressed in several papers that have punctually addressed various aspects of how technology, combined with the human desire to solve information needs through electronic communication, has tried to solve these aspects. The most important approaches are discussed below.

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1.1 The concept of smart tourism

Molz (2012) defines smart tourism as multi-sensuous since it "opens up possibilities of touching, smelling, feeling, tasting and gazing as tourists inhabit and move through a city" (pp. 57–58). A smart tourism project entitled SMART (Scotland's Museums Augmented Reality Tourism) at the University of St Andrews aims to provide visitors with a digital-physical experience where overlaid, personalized, multi-lingual text and rich audiovisual information is presented when a visitor maintains his or her focus on a specific artefact in a museum (Park, Lee, Yoo & Nam, 2016).
Wireless internet, mobile smartphones, portable computers, connected hotspots, and social networking sites are integrated into a converged platform of travel information and services that tourists have ubiquitous access to.

There are two major categories among apps: User Generated Content (UGC) applications and applications intended to monitor preferences, activities, metadata (data about data) in social media.

In social media, tourists share not only knowledge, they typically also share experiences (Munar & Jacobsen, 2014). A tourism experience can be defined as "an individual's subjective evaluation and undergoing (i.e., affective, cognitive, and behavioural) of events related to his/her tourist activities that begins before (i.e., planning and preparation), during (i.e., at the destination), and after the trip (i.e., recollection)" (Tung & Ritchie, 2011, p. 1369).

Although there is no empirical evidence in the specific field of hospitality, it is reasonable to think that user-generated content about a hotel on social network sites will have a strong influence on users' behavior if they consider it credible. In contrast, if individuals perceive that what people post on social network sites is untrue, unreliable, or biased, they will not consider this information in their choice of a hotel (Herrero Crespo et al., 2015).

In their analysis of 107 ICT-related papers published in tourism and hospitality journals during the period 2009-2013, Law, Buhalis and Cobanoglu (2014) concluded that social media plays a major role in online marketing and tourists' decision-making (Del Chiappa et al., 2015).

Close to three-quarters (74.1%) of those who were first-time visitors to a destination for their most recent overnight pleasure trip turned to materials posted online by fellow travellers for information, compared with only half (50.2%) of those who had previously visited. Regarding travel party composition, those who travelled solo on their most recent vacation were much less likely to look at user-generated content for vacation planning; in fact, only 38.3% did so (Simms, 2012).

1.2 About Facebook

For its part, in the context of tourism, the study developed by Redshift Research in 2013 emphasizes that 87.0% of international travellers less than 34 years old use Facebook to search for information about their trips (Herrero Crespo et al., 2015). Facebook is different from other social media websites as most of Facebook users are met off-line and then added later (Stankov et al., 2010).

As the third most visited website on the Internet (Alexa Internet Inc., 2017), Facebook attracts a global audience of over 1.18 billion people for a daily use. When joining the FB community, the platform requires users to compose an online „self" and allows them to share their emotions and problems by posts on the Wall, which are viewed by the users' self-selected and mediated audience. This composition is inherently an act of self-presentation, which is defined by Schlenker (2004) "the goal directed activity of controlling information of self in order to influence the impressions formed by audiences" (He et al., 2014).

Social network sites are web-based services that, through a public or semi-public profile within a bounded system (Boyd & Ellison, 2008), allowing individuals to publish comments and multimedia content, thereby making them available to their contacts.

Contemporary travellers benefit from the internet to acquire travel related information, share their experiences/opinions/reviews for hotels, resorts, inns, vacations, travel packages, vacation packages, travel guides to reduce their risk before purchasing (Barreda & Bilgihan, 2013).

User Generated Content supported through social media are a mixture of fact and opinion, impression and sentiment, experiences, and even rumour (Stankov et al., 2010).

Tourists can create and share their experiences online over different time horizons (Berger & Schwartz, 2011). The expansion of new media and mobile technologies increases the possibility of real-time experience sharing and encourages synchronic communication types (Bødker & Browning, 2012).

It is important to note that the global distribution system (GDS) and the World Wide Web (WWW) revolutionized the tourism sector and have facilitated the development of a globally operating, internet-based tourism environment (Park et al., 2016).

1.3 Prerequisites for monitoring

Predictability is one of the most sought-after goals to be attained by entrepreneurs. The tourism and hospitality industry is no exception. Service predictability is being pursued to streamline activities and minimize losses. Life in the world we currently live in is far from being predictable. When predictability is low, there is a growing need for people to control by other means the factors that influence their affairs, life, leisure, etc. (Dediu & Maiorescu, 2017).

Among all the multimedia formats of the posts, textual input is predominantly used for updating users' status on the FB. The "status updates" are short user-generated public messages that generally contain information about what the FB user is doing or thinking at that point of time, i.e., "what's on your mind?" (Ryan & Xenos, 2011). Such language is regarded as the most common way for people to translate their internal thoughts and emotions into a form that others (i.e., online audiences) can understand (He et al., 2014).

Individuals' daily expressions can also be used to predict personality traits (Markovikj, Gievska, Kosinski & Stillwell, 2013). Among these traits, self monitoring (SM; Snyder, 1974) is identified as a special trait linked with users' expression behavior in the online environment (Toma, Hancock & Ellison, 2008). On the virtual platform, the self-presentational affordances led by SM skills create ''dialectical tensions between an accurate and an ideal self and between a truthful and a deceptive self'' (Hall & Pennington, 2013). In the research regarding degree and type of online deception, SM skills showed promise in explaining variance in online misrepresentation (Hall, Park, Song & Cody, 2010). Hall et al. (2010) suggested that SM was the strongest and most consistent predictor of strategic misrepresentation compared with the Big-Five personality traits (i.e., openness, conscientiousness, extraversion, agreeableness, and neuroticism) and demographic variables (e.g., gender, age, and education) (He et al., 2014).

However, the relationship between SM skills and users' online expression features is not the only important aspect of a social network behavior analysis; the predictability of the online posts for users' SM level is also of interest. That is, in addition to identifying the expression features in different SM levels, it is also important to assess whether these FB textual features can predict the level of users' SM skills.

The SM construct was introduced by Snyder (in 1974) as a trait that describes and explains individual differences in the self-control of expressive behavior for the sake of the demands and norms of an audience or context. There are striking and important individual differences in the extent to which individuals can and do monitor their self-presentation, expressive behavior, and nonverbal affective display (Snyder, 1974). The SM-scale developed by Snyder (1974) was specifically designed to discriminate individual differences in concern for social appropriateness, sensitivity to the expression and self-presentation of others in social situations as cues to social appropriateness of self-expression (He et al., 2014). (See Annex 1)

In the context of the foregoing, the study of He et al. (2014) assessed the quality of the responses to the Snyder's SM Questionnaire (1974) collected via the Internet, and explored the textual features of the posts in different SM-level groups and extracted patterns between FB users' SM skills and their posts on the FB Wall.

Recent research demonstrates that digital footprints can be successfully employed to study important psychological outcomes ranging from personality, language, and emotions to cultural fit and social networking (Kosinski et al., 2016).

An important aspect to be taken into account is that Facebook users can like a given object only once. Thus, all of the user – Like associations have the same strength (Kosinski et al., 2016).

Facebook is just the start. Likes are one example of a generic class of digital record from which predictions can be made, such as tweets, emails, web searches, browsing histories, credit card transactions, and purchases made both on and offline (Kosinski, 2013).

The border between public and private is not determined by accessibility, but by social norms and practices. Take, for instance, a small village, where people know most of the intimate details about each other. Despite the public knowledge of such details, people implicitly assume that certain intimate facts are personal and should not be discussed or, even less so, studied (Kosinski et al., 2016).

Research in psychology has suggested that behavior and preferences of individuals can be explained to a great extent by underlying psychological constructs: personality traits (Farnadi et al., 2016). Knowledge of an

individual's personality allows us to make predictions about preferences across contexts and environments, and to enhance recommendation systems (Lambiotte & Kosinski 2014).

The most widely accepted model of personality, Big Five or Five Factor Model, embraces five traits: Openness, Conscientiousness, Extroversion, Agreeableness, and Emotional Stability (often conversely referred to as Neuroticism).

Returning to the subject of the digital footprints, it has been recently shown that the digital footprint of users can be used to automatically infer their personality. For example, Kosinski et al. (2013) and Youyou et al. (2015) showed that automated personality judgments based on Facebook Likes are more accurate than those made by users' friends or even their spouses. Also, Park et al. (2015) showed that similar predictions can be based on language used in social media (Farnadi et al., 2016).

MyPersonality was a popular Facebook application introduced in 2007 allowing its users to take a number of psychometric tests, including a standard Five Factor Model questionnaire. Users received feedback on their scores and could opt-in to donate their scores and Facebook profile data to research. Data for over 6 million myPersonality users is available to researchers at http://mypersonality.org/. It contains scores on more than 20 psychological tests, demographic profiles, and Facebook profile data including status updates, Likes, social networks, views, work and education history and much more (Farnadi et al., 2016).

Kosinski et al. (2014) analyze in their work how personality is manifested in users' online behaviour as reflected by the websites they browse and their Facebook activity. As Internet browsing is to a large extent a private activity, relationships between website choices and personality might be unaffected by peer pressure and the tendency to present oneself in a positive manner. Similarly, while the contents of Facebook Status Updates, uploaded Pictures, or the choice of Facebook Likes might carry an element of self-enhancement, the frequencies and distribution of Liking behaviour, number of uploaded Photos, or density of the Friendship network are less likely to be affected by users' conscious attempts to control their image. Thus, website choices and Facebook profile features may offer important and potentially unbiased insights into users' personalities.

A group of researchers from the Cambridge and Stanford universities left the premises set out in the previous paragraphs and created a model of computer analysis of the likes given by 86,220 volunteers who allowed access to their data. The conclusion they reached was the following: "Knowing someone well does make a difference in how well they can judge another's personality. The model needed to analyze only 10 likes to outperform a person's co-worker. It needed 70 likes to do better than that person's friend or roommate, and 150 likes to do better than a parent or sibling. Husbands and wives seemed to know their partners best of all: The computer model needed 300 likes to outperform an individual's spouse" (Izadi, 2015).

While such a discovery may startle some, Kosinski said he isn't a proponent of shutting down access to data, but rather providing users with the ability to control their privacy. "Companies should give users the choice if they don't want to give you the (digital) footprint," he said. Plus, he adds, phone and credit card companies already know so much more about you than Facebook does (Izadi, 2015).

1.4 Social media monitoring applications

Regarding existing applications of opinion mining, since the topic has attracted the attention of many research fields, many tools exist so far. A considerable number of these applications consider *Twitter* as a source of opinionated documents, such as *Sentiment 140* and *TweetFeel*. On the other hand, *SocialMention* offers a social media search and analysis platform that aggregates user-generated content from different social media sources (Marrese-Taylor et al., 2014).

In addition, there are a significant number of applications that mine sources that contain product reviews, such as the mentioned TripAdvisor and VirtualTourist (for tourism products) or *Amazon* and *C|Net*. Examples of these applications are the *Lexalytics Salience Engine* and *Nebular*. These applications process opinionated documents and generally offer text summaries as output, lacking other visualization methods. These summaries are intended to provide users a way of processing the vast amount of information available in social media about tourism products (Marrese-Taylor et al., 2014).

2 Research methodology

To justify the statements made, a research was pursued. The qualitative research has been conducted between June 8th and 14th 2017. The experiment method was used as means for understanding the phenomenon. Our analysis focused on 2 monitoring applications, which were identically tested. These applications are: Social

Searcher and Talkwalker. Both these applications are software aggregators. Each of them "ask" several social media websites. The number of aggregated resources is known for Social Searcher. The Talkwalker aggregator did not expose its sources. The assigned task was to retrieve the number of items from social media that contain the word "Bucharest" – the Romanian capital, as tourism strategies should take into account the rich data generated by online social traffic. The present work aims to prove that different social media aggregator applications can obtain very different results.

3 Results and discussion

This partial results of the research can be used from different perspectives and some of them can be used in order to manipulate user's behavior. A particular attention must be paid on the capabilities of the monitoring applications.

Social Searcher exposed the results in a different graphic manner and those who are interested in numeric measurement can see detailed information from inside the graphic perspective. A view on all research period highlights that applications with a great number of users and content provided by users are among the most suitable to sustain mostly information that can lead to user's behavior manipulation. What is most important to reveal is that all these applications have different information patterns (centered on blogging – including microblogging and forums – video, pictures, social network apps), but have in common the metadata structure which describe their specific object. Far from all, the characteristics of quick information act represented by Twitter seems to be of the greatest impact. Even the information promoted on tweets is most often ephemeral, the importance in manipulating user's behavior is more relevant in this medium. Usually, users that are interested in obtaining touristic information are going to specific applications, but the global connection between online applications drive to alter the main message received by the user from specific application that is using for satisfying his information needs.

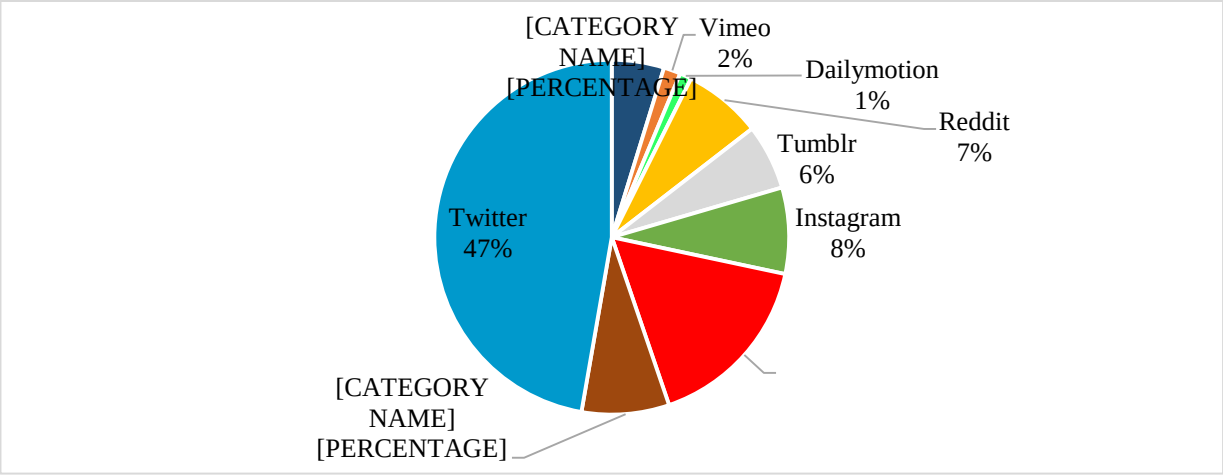

Figure no. 1: Diagram on relevance of the results, by source (offered by Social Searcher
Source: adapted by author, according to Social Searcher

Analyzing the share of daily results per source, we can better see the distribution of measurements and thus understand the relevant sources of information for that moment.

For example, we can notice the great difference in Twitter response starting with the second observation day. The second relevant source seem to be YouTube for that period. This should be put on the Iohannis-Trump presidential meeting, in which some important facts about NATO, domestic corruption from Romania and FBI ex-director James Comey who testified before the Senate Intelligence Committee against Trump was the main subject of interest for the press. Of course, probably the "Romania" keyword should give a more aggressive diagram for the second and the third days of the observation, but we can see in the diagram that soon, after first search and boom of interest the fifth day, which was Monday, emphasize a burst of information search including our key term. All these things prove that each analysis should keep close on all kind of facts that can alter a search results. What should be said is that manipulating the user is easier when is used a "vehicle" which should be an event or other kind of stimulus which attracts user contribution mainly in one sense of the keyword.

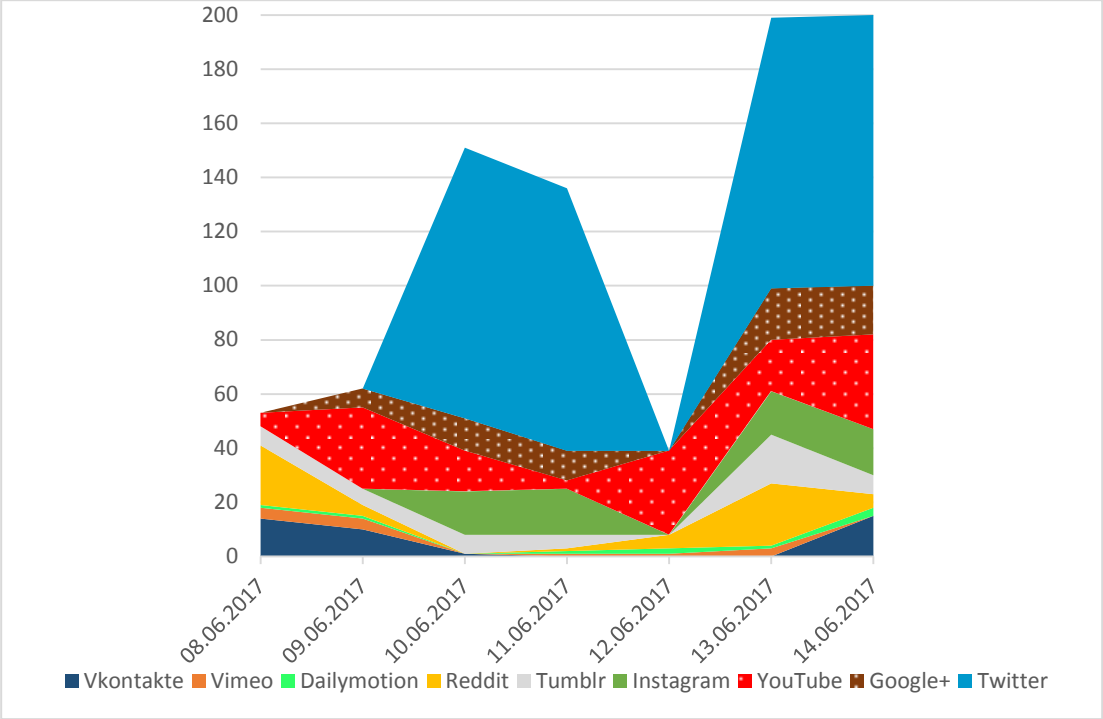

Figure no. 1: Diagram of daily results, by source (offered by Social Searcher)

Source: based on research conducted by author.

Table 1. Daily measurements

Date	Social searcher										Talkwalker
	Vkontakte	Vimeo	Dailymotion	Reddit	Tumblr	Instagram	YouTube	Google+	Twitter	∑ Day	
08.06.2017	14	4	1	22	7	0	5	0	0	53	2041
09.06.2017	10	4	1	4	6	0	30	7	0	62	2149
10.06.2017	1	0	0	0	7	16	15	12	100	151	1831
11.06.2017	0	1	1	1	5	17	3	11	97	136	1198
12.06.2017	0	1	2	5	0	0	31	0	0	39	2100
13.06.2017	0	3	1	23	18	16	19	19	100	199	3072
14.06.2017	15	0	3	5	7	17	35	18	100	200	2546
∑ Source	40	13	9	60	50	66	138	67	397		

Source: based on research conducted by author

Talkwalker, as I said, does not explicitly provide the sources, but only the sum of the individual measurements. For this reason, the difference in the results offered by the two applications cannot be explained. And this is a possible breach in which the results provided to users can manipulate the decision they make. Even with the Social Searcher measurements, we are not sure that the results are complete. These software aggregators are not required to make public the policies and the computing method they use.

Conclusions

As Law, Buhalis, and Cobanoglu (2014) said that social media plays a major role in online marketing and tourists' decision-making, this research sustains and completes their conclusion. Sometimes marketing tends to distort the services and products. Using a "vehicle" which should be an event or other kind of stimulus, which attracts user contribution, as we early mentioned, marketing can overcome the barrier between subjective presentation and user manipulation.

We must not forget that these Internet accessible software aggregators are not the most efficient applications. These are just a facet of what can be a well-developed program, most often used privately.

There is recent evidence that responds affirmatively to questions about subjective communication of research into databases containing information about people for political purposes. This is the case of Cambridge Analytica in London, which through General Director Alexander James Ashburner Nix made known in a press release that "... our revolutionary approach to data communication has played a decisive role in the extraordinary victory of President Trump." In another context, on the Concordia Forum scene, Nix said, at Cambridge, "[...] we were able to form a model to predict the personality of every single adult in the United States of America." There are public assertions that bind also the Brexit campaign with the participation of the Nix-led firm.

Considering all this, we can say that the tourism and hospitality industry, depending on the complementary and political factors, can be influenced by manipulation in the circumstances in which the interests converge to such a situation.

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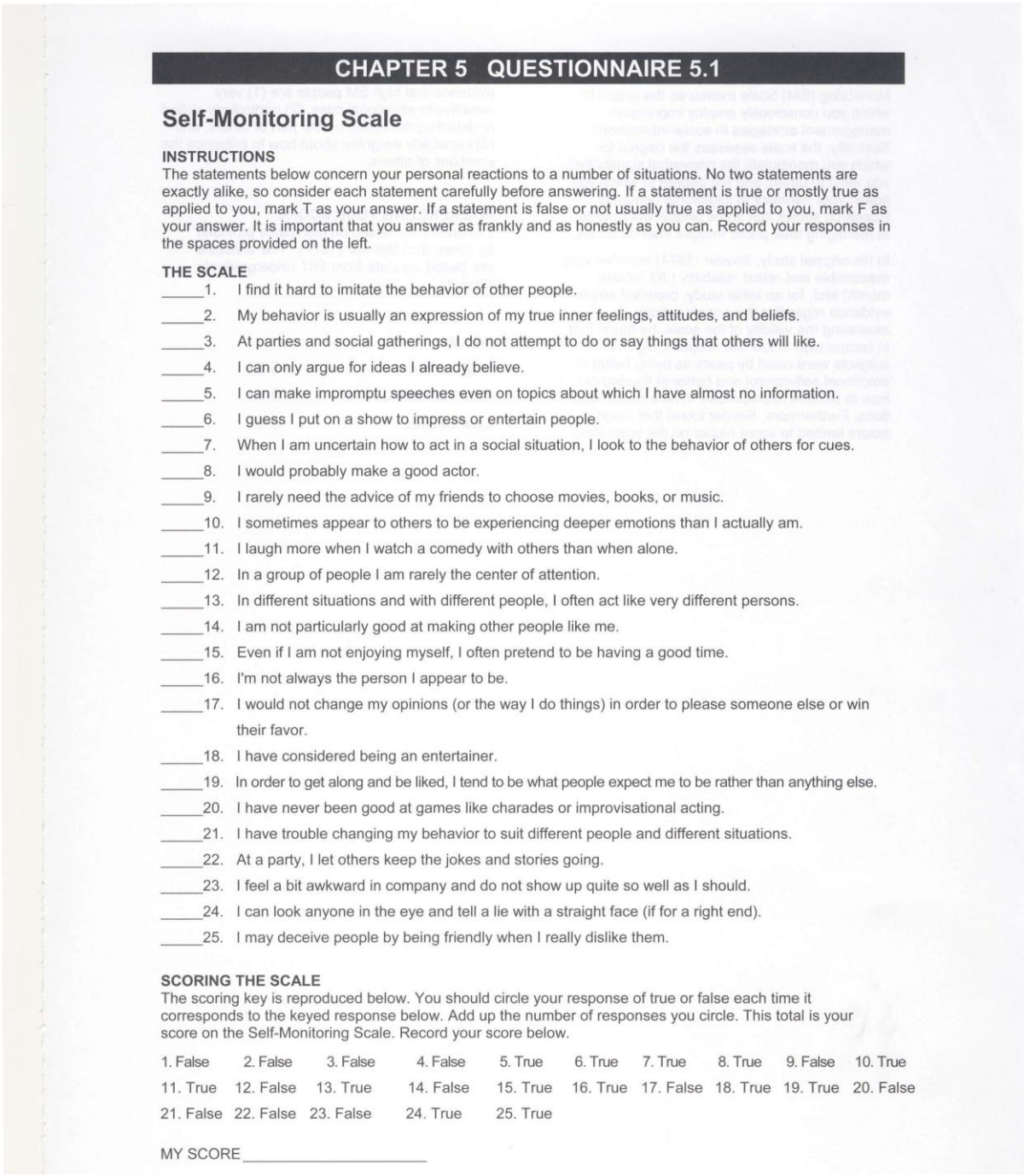
Annexes

Annex 1. Snyder's Self-Monitoring Questionnaire



CHAPTER 5 QUESTIONNAIRE 5.1

Self-Monitoring Scale

INSTRUCTIONS

The statements below concern your personal reactions to a number of situations. No two statements are exactly alike, so consider each statement carefully before answering. If a statement is true or mostly true as applied to you, mark T as your answer. If a statement is false or not usually true as applied to you, mark F as your answer. It is important that you answer as frankly and as honestly as you can. Record your responses in the spaces provided on the left.

THE SCALE

_____1. I find it hard to imitate the behavior of other people.
_____2. My behavior is usually an expression of my true inner feelings, attitudes, and beliefs.
_____3. At parties and social gatherings, I do not attempt to do or say things that others will like.
_____4. I can only argue for ideas I already believe.
_____5. I can make impromptu speeches even on topics about which I have almost no information.
_____6. I guess I put on a show to impress or entertain people.
_____7. When I am uncertain how to act in a social situation, I look to the behavior of others for cues.
_____8. I would probably make a good actor.
_____9. I rarely need the advice of my friends to choose movies, books, or music.
_____10. I sometimes appear to others to be experiencing deeper emotions than I actually am.
_____11. I laugh more when I watch a comedy with others than when alone.
_____12. In a group of people I am rarely the center of attention.
_____13. In different situations and with different people, I often act like very different persons.
_____14. I am not particularly good at making other people like me.
_____15. Even if I am not enjoying myself, I often pretend to be having a good time.
_____16. I'm not always the person I appear to be.
_____17. I would not change my opinions (or the way I do things) in order to please someone else or win their favor.
_____18. I have considered being an entertainer.
_____19. In order to get along and be liked, I tend to be what people expect me to be rather than anything else.
_____20. I have never been good at games like charades or improvisational acting.
_____21. I have trouble changing my behavior to suit different people and different situations.
_____22. At a party, I let others keep the jokes and stories going.
_____23. I feel a bit awkward in company and do not show up quite so well as I should.
_____24. I can look anyone in the eye and tell a lie with a straight face (if for a right end).
_____25. I may deceive people by being friendly when I really dislike them.

SCORING THE SCALE

The scoring key is reproduced below. You should circle your response of true or false each time it corresponds to the keyed response below. Add up the number of responses you circle. This total is your score on the Self-Monitoring Scale. Record your score below.

1. False	2. False	3. False	4. False	5. True	6. True	7. True	8. True	9. False	10. True
11. True	12. False	13. True	14. False	15. True	16. True	17. False	18. True	19. True	20. False
21. False	22. False	23. False	24. True	25. True					

MY SCORE _____

Source: Snyder, M. (1974). Self-monitoring of expressive behavior. *Journal of Personality and Social Psychology*, 30(4), pp. 526-537