INVESTIGATING CONSUMER DEMAND FOR COUNTERFEIT GOODS:
EXAMINING THE ABILITY OF SOCIAL LEARNING AND LOW SELF-CONTROL
TO EXPLAIN VOLITIONAL PURCHASE OF NON-DECEPTIVE COUNTERFEIT
PRODUCTS IN AN EASTERN EUROPEAN COLLEGE SAMPLE

By

Zoltán Levente Fejes

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

Criminal Justice – Doctor of Philosophy

2016

ABSTRACT

INVESTIGATING CONSUMER DEMAND FOR COUNTERFEIT GOODS:
EXAMINING THE ABILITY OF SOCIAL LEARNING AND LOW SELF-CONTROL
TO EXPLAIN VOLITIONAL PURCHASE OF NON-DECEPTIVE COUNTERFEIT
PRODUCTS IN AN EASTERN EUROPEAN COLLEGE SAMPLE

By

Zoltán Levente Fejes

Product counterfeiting is an interdisciplinary phenomenon that has relatively recently

emerged as a field of interest for criminologists. Consequently, a clear understanding of product

counterfeiting from a criminological perspective is lacking, as the application of criminological

theory to this crime type as well as any guidance for the analyses of the phenomenon is limited at

this time (Heinonen, Holt & Wilson, 2012).

The examination of the purchase of counterfeit goods from a criminological perspective

is appropriate and opportune not only due to its role as an 'enabler' of counterfeit trade (without

demand there would be no or severely limited[1] trade of counterfeit goods), but also due to the

fact that, at least in some countries[2], the acquiring of fake goods has moved in the realm of

criminalized activities. Furthermore, the lack of application of criminological theory to the

phenomenon is a considerable gap in the literature. The proposed dissertation aims to address

this gap by testing core elements of two competing theoretical explanations: Akers' Social

Learning Theory (SLT) and Gottfriedson and Hirschi's Low Self-Control Theory (LSC). The

objective of the study is to test the principal propositions of both with respect to their ability of

providing adequate explanations for the volitional purchase of non-deceptive counterfeit goods

---

[1] Although some scholars claim that a supply of counterfeit product will exist as long as there is a demand for such goods (Bloch, Bush, & Campbell, 1993; Chakraborty, Allred, & Bristol, 1996; Chakraborty, Allred, Sukhdial, & Bristol, 1997), this is only partially true: even if intentional purchase is nonexistent, highly deceptive counterfeit goods (which may be virtually indistinguishable from genuine products) may still be produced and introduced into legitimate supply chains.

[2] E.g., France and Italy.

in physical market environments, and compare their ability of predicting levels of counterfeit purchase in a Romanian student population. In addition, the study tests the ability of the two theories to provide explanations of deviant behaviors outside of the socio-economic and political context in (and for) which they have been developed.

The dissertation makes use of original data gathered via a cross-sectional survey design applied college students enrolled at Babeș-Bolyai University (Cluj-Napoca), the largest urban settlement (and former capital) of one of the three major geographic, historical and cultural regions (Transylvania) of Romania. The theoretical and policy implications of the findings are also discussed

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1 : INTRODUCTION

Product counterfeiting is a sizeable global phenomenon that has evolved considerably in the last few decades, and which causes significant concern due to its rapid expansion and far-reaching economic and public health consequences (OECD, 2007). Various estimates place the magnitude of counterfeit market between 5 and 7% of world trade (CIB, 1997), but neither the true magnitude of counterfeit trade nor the size of its effects are precisely known (Spink & Fejes, 2012). Nevertheless, there is a consensus that counterfeiting is pervasive, and that its economic and public health consequences are considerable and widespread (OECD, 2007; GAO, 2010).

The concept of product counterfeiting describes a range of (often interconnected) illicit activities that infringe on the intellectual property right[3] (IPR) of the rightful intellectual property (IP) owner (Spink & Fejes, 2012; Fejes & Wilson, 2013). This transnational crime involves consumer fraud (UNODC, 2010), as well as the (illegal) manufacturing and/or distribution of goods without the intellectual property right holder's permission (IACC, n.d.). Therefore, product counterfeiting can be defined as the copying of a product (and/or package) with the intent to deceive consumers into believing that the product (and/or package) is genuine (Spink & Fejes, 2012; Fejes & Wilson, 2013). Although this definition ostensibly places an emphasis on the fraud component of the crime (deception of consumers), the infringement on IPR is at the core of product counterfeiting. In addition, the act of counterfeiting may not involve production at all, but it could be as simple as falsely labelling or packaging an item that otherwise does not violate IPR (Eisend & Schuchert-Güler, 2006). Consequently, counterfeit products[4] are "any goods, including packaging bearing without authorization, a trademark that is identical to a

---

[3] IPR refers to the rights given to persons over the creations of their minds and give the creator exclusive rights over the use of their creation for a certain period of time" (WIPO, n.d.).

[4] Consistent with the GAO (2010) definition of counterfeit products cited here, throughout this dissertation the terms (counterfeit or genuine) goods and products may be used interchangeably.

trademark validly registered for those goods, or that cannot be distinguished in its essential aspects from such a trademark, and that, thereby, infringes the rights of the owner of the trademark in question" (GAO, 2010, p. 6).

With the number of IPR-intensive industries[5] on a steady rise[6] during the past decades, IP – defined as consisting of "creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce" (WIPO, n.d.) – has become central to modern economies (EPO & OHIM, 2013). Accordingly, the protection of IPR has long been at the forefront of industry and law enforcement endeavors[7], but has only relatively recently emerged as an area of research.

From a scholarly point of view, product counterfeiting does not fit neatly into any single academic discipline, but rather it is an interdisciplinary phenomenon that overarches several scholastic fields, and to date, no single discipline has claimed "ownership" or engaged in a holistic and strategic explanatory analysis of the phenomenon (Fejes & Wilson, 2013). According to recent reviews of the literature, although scholars from a wide variety of fields have contributed to a body of knowledge that is dispersed across different disciplines, the bulk of the research efforts are concentrated within the fields of economics, consumer behavior, marketing, and supply chain management (Fejes & Wilson, 2013; Lee & Yoo, 2009; Staake et al. 2009). These efforts have generated broad-spectrum descriptions of product counterfeiting (e.g., Grossman & Shapiro, 1988; Hilton et al., 2004), descriptions of legal challenges posed by IP infringements and legal steps adopted against counterfeiters by governments (e.g., Slocum,

---

[5] Although all industries use IP to some extent, IPR intensive industries are defined as those having an "above average use of IPR per employee", although it is unclear what the Office for Harmonization in the Internal Market considers to be "average" (EPO & OHIM, 2013, p. 6).
[6] 90% of EU exports originate from IP-intensive industries, contributing 26% of EU's employment and 39% of EU's GDP (EPO & OHIM, 2013).
[7] Product counterfeiting came to the attention of the US government more than 100 years ago (Chaudhry & Zimmerman, 2009), but legislative and policy efforts have intensified in recent decades.

2010), as well as a series of managerial guidelines to prevent counterfeiting (e.g., Chaudhry et al., 2005; Schultz & Saporito, 1996). An area that has received special focus is constituted by the various aspects of consumer behavior. Research has extensively addressed the attitudes of consumers toward counterfeits (deMatos et al., 2007; Bian & Veloutsou, 2007; Penz & Stöttinger, 2005), their willingness and motivation for purchase (Albers-Miller, 1999; Ang et al., 2001; Gentry et al., 2001; Penz & Stöttinger, 2005), as well as the factors influencing consumer decision-making related to knowingly purchasing counterfeit products (Gentry et al., 2006; Wee et al., 1995). In addition, a small number of studies have examined the ability of economic theories such as the theory of reasoned action (e.g., Chang, 1998; Peace et al., 2003), or its expanded version, the theory of planned behavior (e.g., Chang. 1998) to explain the purchase of counterfeit goods (Staake et al., 2009). This heightened focus on consumers has resulted in a body of knowledge that is decidedly skewed toward the demand side of product counterfeiting, with limited information generated on the supply side of the phenomenon (Staake et al., 2009).

The aforementioned reviews made evident that fact that product counterfeiting has captivated the interest of economists, marketing and consumer behavior scholars for several decades (Staake et al. 2009; Lee & Yoo, 2009). By contrast, product counterfeiting has only recently emerged as an area of interest for the field of criminology. As a result, the amount of criminological research, especially with regards to the application of criminological theory to this phenomenon, is limited at this time (Heinonen, Holt & Wilson, 2012; Hollis et al., 2015). Consequently, a clear understanding of product counterfeiting from a criminological perspective is lacking, and insufficient guidance for the analyses of the phenomenon exist (Heinonen et al., 2012).

Accordingly, an examination of the purchase of counterfeit goods from a criminological perspective is appropriate and opportune not only due to its role as a crime enabling behavior[8], but also due to the fact that some European countries (namely Italy and France)[9] have criminalized the intentional acquiring of fake goods. In comparison, the UK has taken a somewhat 'softer' approach, aiming to change consumer behavior and dissuading the general public from buying counterfeits (Large, 2015). Conversely, only one US state[10] (Georgia) has a code that "could be interpreted as intending to punish purchasers of counterfeit goods" (Estacio, 2013, p. 400) while New York City[11] is considering a local ordinance criminalizing the purchase of fake goods. The Georgia state statute seems to have been enacted with similar intentions as those in Italy and France, however the text of the law is unclear as to whether the buyer must purchase the item with the intention to sell or resell in order for the act of purchase to become criminal (Estacio, 2013). Although these public policy initiatives aiming to deter the consumption of fake goods are relatively recent, the idea of criminalizing this behavior is not novel, as lobbying by manufacturers for the strict enforcement of criminal sanctions against consumers has been proposed by Albers-Miller as early as 1999 (Albers-Miller, 1999).

---

[8] As Cordell et al. (1996) indicated, "consumer purchase of a counterfeit is not a criminal act, but it does abet the sale, which is criminal" (p. 42).

[9] To date, Italy and France are the only European Union countries that have adopted legislation criminalizing the intentional purchase of counterfeit goods. French IP laws (considered to be the strictest in Europe – Estacio, 2013) give law enforcement the authority to search individuals and to seize counterfeit products throughout the territory of the country and include penalties for individuals (Howie, 2010). If it can be proven that the consumer acted in bad faith (Slocum, 2010) the intentional consumption of counterfeit goods is punishable by a maximum fine of 300,000 euros or three years in jail (Silverman, 2009; Howie, 2010). Penalties increase when the offense is committed for the purpose of selling, supplying or lending of the infringing goods. Italian penalties are more lax (Estacio, 2013).

[10] In contrast to the severity of the aforementioned European countries, the United States Customs allows those entering the country to import one counterfeit item per category of product if it is intended for personal use and is not for sale (CBP, n.d.).

[11] In 2011 New York City councilwoman Chin proposed a bill that would sanction buyers of counterfeit merchandise, making the act a class A misdemeanor punishable by a maximum of $1,000 fine, up to one year of jail time or both (Doyle, 2011; Estacio, 2013). Each product purchased would be considered a separate violation (Estacio, 2013). This bill was on the agenda of the city council in 2013, and it is currently listed as "filed" on the city council web page.

The examination of product counterfeiting from a scholarly perspective is a daunting task due to the illicit and complex nature of the phenomenon, as well as due to the lack of reliable data (GAO, 2010). Recent criminological examinations of the phenomenon are encouraging, although, due to the lack of data, these explorations of the offense are primarily theoretical in nature. Nevertheless, some of these analyses have identified the defining characteristics of the crime, with the aim to facilitate a comprehensive definition as well as the recognition of product counterfeiting as a distinct, multi-dimensional crime that defies classification (Heinonen, Spink & Wilson, 2014), while others have examined the phenomenon through the lens of routine activities theory (e.g., Hollis, Fejes, Fenoff & Wilson, 2015; Hollis & Wilson, 2014). These works constitute a step in the right direction, but the lack of application of criminological theory to this crime enabling behavior is still a considerable gap in the literature[12]. In addition, the dearth of studies and the lack of reliable data on the topic, especially in this specific region of the EU (as discussed in detail in Chapter 2), point to the significance of this dissertation.

The present study aims to address this gap by empirically examining the relationship of Akers' (1998) Social Learning Theory (SLT), Gottfredson and Hirschi's (1990) Low Self-Control Theory (LSC), and the intentional purchase of counterfeit goods. Specifically of interest is the evaluation of the ability of these two 'core' criminological theories to explain purchasing behavior by testing fundamental elements of these two competing theoretical explanations and comparing their ability of predicting levels of volitional purchase of non-deceptive counterfeits in physical market environments. Accordingly, the study will examine the (1) influence of peer interactions (differential association; imitation), (2) individual 'definitions' of counterfeiting, and

_____

[12] The lack of policy evaluation (not just with regards to those mentioned in the present study, but in general) is also a significant gap in the product counterfeiting literature (Fejes et al., draft), a gap that needs to be addressed before efficient and effective policies can be put in place to significantly affect the magnitude and outcomes of the phenomenon. In addition, the crime enabling aspect of counterfeit product purchasing (i.e., as a risk factor contributing to the expansion of the manufacturing and trade of counterfeit products) is also lacking. It is important to note that this dissertation will not address these aspects.

(3) differential peer reinforcement of the behavior have on the purchase of counterfeit goods. It

will also examine the (4) effects of an individual's level of self-control on the purchase of

counterfeit goods and (5) assess the role of opportunity in counterfeit purchase. In addition, its

setting in Eastern Europe allows the (6) testing of the ability of the two theories to provide

explanations of deviant behaviors outside of the socio-economic and political context in (and for)

which they have been developed.

Choice of criminological theories

Portrayed mainly as an economically motivated (white-collar) crime (Spink & Fejes,

2012), which are presumed to be "the most rational of crimes" (Cornish & Clarke, 1986; Akers,

1990, p. 663), it would seem logical to examine product counterfeiting from the viewpoint of

criminological theories that have their foundation in economic models of rational decision

making[13], such as deterrence theory (DT) or rational choice theory (RCT). These theories could

be potentially employed both for the supply and the demand side of product counterfeiting[14].

However, Akers (1990) has argued that social learning theory (SLT) incorporates the central

concepts and propositions of RCT and DT, as these can be subsumed under the more general

differential reinforcement principle of the social learning approach to deviant and criminal

behavior (p. 675). Akers has also argued that SLT not only incorporates the concepts and

processes of DT and RCT, but it also incorporates others that these more narrow models do not

(1990, p. 675), making SLT a more complete model of criminal or deviant behavior. SLT has in

fact been successfully employed to other forms of intellectual property crime (e.g., software

---

[13] Economic theories of consumer behavior have in fact been applied to software piracy (Glass & Wood, 1996; Chang, 1998; Peace et al., 2003), another form of IP infringement that is related, but, is markedly different from product counterfeiting; or to product counterfeiting with the aim to systematize past findings and developing a model explaining key drivers of the demand for counterfeits (Penz & Stöttinger, 2005).

[14] Although some have claimed that rational choice models fall short as they are unable to explain the affective influences on consumer behavior (Harrist, 2006).

piracy – Higgins et al., 2006; Burruss, Bossler, & Holt, 2013.) and has the potential of offering a more comprehensive understanding of counterfeit purchase (than DT or RCT).

Aker's (1998) SLT is touted as "a general crime theory, capable of explaining a wide range of miscreant human behavior" (Winfree & Bernat, 1998, p. 539), while Gottfredson and Hirschi's (1990) low self-control theory (LSC) also posits itself as a general theory of crime and deviance. As such, both theories should be applicable to a large spectrum of deviant and criminal acts. Although the purchase of counterfeit goods is criminalized only in a handful of countries, it is by all accounts a deviant behavior, as the intentional purchase of counterfeits "violates the generally accepted norms of conduct … and is therefore held in disrepute by marketers and by most consumers" (Fullerton & Punj, 1993, p. 570; 1997; Penz & Stöttinger, 2005). Accordingly, the purchase of counterfeit goods is well within the realm of deviant behaviors that these two general criminological theories claim to be able to explain.

Aker's SLT (discussed in more detail in Chapter 2) asserts that criminal behavior is learned in the same manner as individuals acquire noncriminal norms and behavior. This learning happens through a process of differential association in which interactions with significant peers provide differential reinforcement of certain behaviors as well as models to imitate. For example, it is plausible that individuals may learn (positive) definitions that define consumption of counterfeits as totally acceptable (being 'smart' or 'savvy' shoppers – see Tom et al., 1998; Penz & Stöttinger, 2005) in the context of groups that with which one is in differential association, as research evidence suggests that consumers are most likely to engage in illicit behavior if there was peer pressure to do so (Albers-Miller, 1999).

Conversely, low self-control theory (LSC) (Gottfredson & Hirschi, 1990) – also discussed in more detail in Chapter 2 – which claims to explain all individual differences in the

'propensity' to refrain from or to engage in crime and deviance "at all ages, and under all circumstances" (Akers, 2000, p. 110; Gottfredson & Hirschi, 1990; Pratt & Cullen, 2000), also has applicability to the crime of product counterfeiting and could offer an alternative explanation (from that offered by SLT) for the purchase of counterfeit goods. For example, it is also plausible that inadequate levels of self-control are related to higher rates of counterfeit consumption. This is underscored by the resemblance of elements of low self-control (impulsivity; risk-taking; short-sightedness; immediate gratification) with the purchasing behavior identified in counterfeiting literature as findings of research on the consumption of counterfeit goods suggest that some consumers buy counterfeit goods as a form of personal gratification (de Matos et al., 2007), to satisfy their desire for products that they cannot afford (Wee et al., 1995).

There is much merit in applying core criminological theories to product counterfeiting, as it contributes to the advancement of the understanding of this understudied area of criminology and conceivably even to the development of a theory of product counterfeiting. The examination of the phenomenon (both demand and supply) through the lens of these theories is important for the development of policy responses and law enforcement prevention strategies as well. Although there might be an urge to focus on the supply side of counterfeiting since that is where most of the criminal aspects of the phenomenon reside, it is important to note that an examination of the demand side from a new perspective is equally important; as without an understanding of demand side of counterfeiting, it is impossible for law enforcement agencies to effect meaningful change in the manufacturing and trade of counterfeit goods (Yoo & Lee, 2004).

Focus on volitional purchase of non-deceptive counterfeits in physical market settings

As stated above, this dissertation aims to address the issue of intentional purchase of non-deceptive counterfeit goods. Proposed by Grossman and Shapiro (1988a), the distinction between deceptive and non-deceptive counterfeit (discussed in more detail in Chapter 2) discerns between products that misrepresent their true nature and are able to deceive consumers into believing that they have purchased a genuine product (Chakraborty et al., 1996; Grossman & Shapiro, 1988b; OECD, 2007), and between non-deceptive counterfeits, which are recognized by the buyer as not being authentic goods "according to specific informational cues such as price, purchase location, or materials used" (Chakraborty et al., 1996; Eisend & Schuchert-Güler, 2006, p. 2; Gentry, Putrevu, & Shultz, 2006). As discussed in the following chapter, this distinction is not a dichotomous one, but rather it represents a continuum that encompasses products with varying degrees of deceptiveness.

This distinction is crucial in the context of this dissertation, since arguably only in the case of non-deceptive counterfeits can one talk about intentional/purposeful purchase, while in the case of deceptive counterfeits one cannot talk about engaging in deviant behavior (in terms of purchasing at least). Therefore, it can be argued that the act of purchasing deceptive counterfeits falls outside of the realm of behaviors that the two theories (SLT & LSC) aim to explain, although some may reason that individuals with low self-control will purchase counterfeit goods irrespective of their nature (deceptive/non-deceptive) in order to achieve instant gratification.

Nevertheless, this dissertation will focus *exclusively on the intentional purchase of non-deceptive counterfeit goods*, as consumers are not only limited in their ability of distinguishing between genuine goods and counterfeits, but they also tend to vary widely in terms of the level of their ability to authenticate (Fejes & Wilson, 2013). Therefore, the inclusion of high-quality

counterfeits of 'super-deceptive' products (Bosworth, 2006) would make it extremely difficult if not impossible to measure the consumption of counterfeit goods within the target population.

In addition, due to the nature of the counterfeit marker in Romania (discussed in more detail in Chapter 2) as well as the limitations imposed by available funds, *the study concentrates on a handful of categories of counterfeits: counterfeit apparel (including accessories), perfumes and electronics*. This allows the examination of purchasing behavior for a range of products which differ in their price range, life-span, as well their ability to 'grant status' to the buyer.

Furthermore, this dissertation *focuses solely on purchases in physical market settings* due to characteristics of the study setting in terms of internet access/use and online purchases. Accordingly, the percentage of Romanian households that have a broadband connection is among the lowest in the European Union. Statistics for 2014 indicate that only 58 percent of the Romanian households had broadband internet connection (compared to the EU average of 73%), while only 61 percent had any form of internet connection (compared to the EU average of 81%) (Eurostat, 2015a). In addition, the percentage of individuals who have never used the internet is among the highest in the EU (39% compared to the EU average of 18%), with Romania being far behind other EU states and the EU average when it comes to purchases made online within the past 12 months as well (Eurostat, 2015a). According to official statistics, merely 17% of the individuals who have used the internet within the last year have made a purchase online, compared to the EU average of 63% (Eurostat, 2015a). The relatively low level of online purchases by Romanians within the past year provides added support for electing to focus exclusively on purchases in physical market locations.

CHAPTER 2 : THEORETICAL BACKGROUND

The purpose of this study is to empirically examine the ability of two core criminological theories, Aker's (1998) SLT and Gottfredson and Hirschi's (1998) LSC to explain individual level purchase of counterfeit goods. The current chapter will discuss the state of knowledge on product counterfeiting, provide an overview of the key concepts and propositions in Akers' (1998) SLT and Gottfredson and Hirschi's (1990) LSC, and conduct a theoretical appraisal of the suitability of the two theories as explanations of counterfeit purchase. The chapter will conclude with a summary of the issues discussed in this section.

The state of knowledge on product counterfeiting

As put forth in the previous chapter, the knowledge on product counterfeiting is skewed towards the demand side of the phenomenon. This is largely due to the nature of the crime which limits access to data on the supply side, but also because scholars that have addressed the topic were predominantly interested in affecting consumer behavior. This assertion is substantiated by recent reviews of the literature on product counterfeiting (Staake et al., 2009; Lee & Yoo, 2009). Accordingly, much is known about consumer attitudes toward counterfeiting (Chakraborty et al., 1996 Cordell, Wongtada, & Kieschnick, 1996; Huang, Lee, & Ho, 2004), their willingness to purchase fake goods (Albers-Miller, 1999; Chakraborty et al., 1997; Dodds et al., 1991; Eisend & Schuchert-Güler, 2006; Penz & Stöttinger, 2005; Furnham & Valgeirsson, 2007), their motivation for consuming counterfeits (Ang et al.,2001), as well as their ability to distinguish knockoffs from authentic products (Fejes & Wilson, 2013; Gentry et al., 2006). Far less is known with regards to the magnitude of counterfeit trade and effects of these infringing goods on the economy and public health, as the lack of reliable data and methodological challenges have hampered the development of precise estimates (Spink & Fejes, 2012; GAO,

2010; Staake et al., 2009). Even less is known about the supply side of product counterfeiting, as after decades of scholarly examinations scholars are yet to unravel the complexities of the supply mechanisms of the counterfeit market, the manufacturing and supply chain infiltration techniques of counterfeiters, or their sales tactics and growth strategies (Staake et al., 2009, p. 340). The following section reviews in detail (the limited) information available on various aspects of the counterfeiting phenomenon.

The origins and evolution of product counterfeiting

Technological advancements of past few decades, outsourcing of know-how and technologies to countries with a less stringent enforcement of intellectual property rights have greatly contributed to the growth of the counterfeiting problem, leading the FBI to label it "*the crime of the 21ˢᵗ century*" (Fourtou, 2006). However, this phenomenon plaguing the global economy is not the creation of the modern world, evidence suggesting that it has been around for "at least 2,000 years" (Chaudury & Zimmerman, 2009, p. 7). According to Chaudhry and Zimmerman (2009) manufacturers or owners have been distinguishing marks to show quality or that they originate from a legitimate/trusted source as early as the times of the Roman Empire, where merchant's marks were stamped on goods such as bricks and tiles. Similarly, the act of copying and illegitimately using such markings to deceive consumers can also be traced back to ancient times, archeological evidence suggesting that it was a widespread occurrence[15]. The dishonest use of such markings became an offense during the Middle Ages, when trademark infringement became criminalized and subject to severe penalties which included being boiled alive (Chaudhry & Zimmerman, 2009, p. 7).

---

[15] For example, artifacts found by archeologists seem to suggest that FORTIS brand-name Roman oil lamps were extensively counterfeited (Chaudhry & Zimmerman, 2009, p.8). Other sources mention counterfeit seals on wine amphorae stoppers dating back 27BC which were used to disguise local wine to look like more expensive Roman imports (Phillips, 2007).

Currently, as one of the economies significantly impacted by the effects of counterfeit trade, the U.S. is at the forefront of the fight against counterfeits. However, counterfeit products were not always considered a threat to the U.S. economy. The U.S. Patent Act of 1793 did not provide protection for foreign inventions, meaning that Americans could copy any product patented in a foreign country and then apply for a US patent, making copying of foreign wines, gloves and thread a commonality in nineteenth century America (Chaudhry & Zimmerman, 2009, p. 9). As these examples illustrate, the 'widespread' copying of marketable goods could have been around for a long time, but has reached a distressing scale during the last 3-4 decades.

A typology of product counterfeiting

As stated in the introductory chapter, this dissertation focuses on the intentional purchase of non-deceptive counterfeits. Accordingly, before proceeding with the discussion of the characteristics of the phenomenon, a review of the various typologies of counterfeit goods is paramount.

Firstly, an essential differentiation has to be made between two IPR infringements that are frequently mentioned interchangeably, but are distinctly different concepts: product counterfeiting and piracy (Spink & Fejes, 2012). As reflected in the Agreement on the Trade-Related aspects of Intellectual Property Rights (TRIPS, 1994), while piracy is "the unauthorized duplication of copyrighted works such as computer software, electronic books, movies, or music" (Spink & Fejes, 2012; p. 4), product counterfeiting refers to the copying of a product (and/or package) with the intent to deceive consumers into believing that the product (and/or package) is genuine (Spink & Fejes, 2012; Fejes & Wilson, 2013). Accordingly, counterfeit goods are "any goods bearing without authorization a trademark which cannot be distinguished in its essential aspects from the trademark registered for such goods" (Staake & Fleisch, 2009, p.

17), and thus represent a trademark infringement, while pirated goods are goods that infringe on "copyright and related intellectual rights" (Staake & Fleisch, 2009, p. 17) thus representing a copyright infringement.

Despite this clear differentiation, product counterfeiting tends to be treated as an amorphous concept that encapsulates a host of criminal activities involving a myriad of product categories, multiple types of offenders (disaggregators, imitators, fraudsters, desperados and counterfeit smugglers – Staake & Fleish, 2008), as well as numerous techniques (production of over-runs, diversion, tampering, etc. – Gentry et al, 2001; Spink & Fejes, 2012) which require considerable amount of skill, as well as opportunity (access to raw materials, production facilities, supply chains, original products or blueprints, etc.). Some of these activities and/or products are erroneously included under the 'umbrella' of counterfeiting which leads to confusion with regards to the scope and scale of counterfeiting and counterfeit trade.

The need to differentiate between various infringing acts goes beyond the counterfeit-pirated distinction discussed above. In fact, products that are commonly referred to as 'counterfeit' or 'fake' may fall in one of the categories arranged along a genuine-counterfeit continuum (see Table 2.1). Although most of the categories in Table 2.1 may represent some form of an infringement on the IP rights of the authorized manufacturer or rights holder, only the last two ('low'- and 'high-quality counterfeits') fit the definition of counterfeit products or goods manufactured with the intent to mislead consumers. Goods in the other five categories ('seconds', 'diverted products' including grey-market goods[16]) are produced by legitimate manufacturers and infringe on IPR either because they are distributed and/or retailed in other

---

[16] Grey market goods are defined by the International Trademark Association as "genuine branded goods that are imported into a market and sold there without the consent of the owner of the trademark" (INTA, 2015, para. 1). Grey market goods display a trademark legally (Fornaro, 2008), as they are "manufactured by or for or under license from the brand owner" (INTA, 2015, para. 2)

then their designated markets, due to the lack of production authorization ('over-runs'), or due to fraudulent alterations to the product itself or its packaging ('adulteration', 'tampering'). Although often conflated under the general umbrella term of 'fakes', products in these categories should be differentiated from produced (low- or high-quality) counterfeits due to the fact that while these authentic goods become infringing only upon their unauthorized distribution, sale or alteration, counterfeits are manufactured without authorization by illicit manufacturers, distributed and sold through illegal channels, and are thus infringing from the onset. Largely due to their nature, the latter types of products are "the most difficult to distinguish at purchase from genuine goods" (Berman, 2008, p. 192).

Another useful distinction provided by Grossman and Shapiro (1988a) categorizes counterfeit goods as either 'deceptive' or 'non-deceptive'. Deceptive counterfeits refer to goods which purport to be genuine and are purchased by consumers believing that they are acquiring an authentic product, in which case the consumers are victims (Cordell et al., 1996; Grossman & Shapiro, 1988a). By contrast, the category of non-deceptive counterfeits designates goods that are not intended to deceive, and consumers – aware of their fraudulent nature – knowingly purchase them for various reasons, including aiming to appear affluent or in-style (Wall and Large, 2010).

This distinction is very valuable, especially in the context of recent efforts criminalizing the act of *deliberately* purchasing counterfeits, however, the deceptiveness of counterfeits is not a dichotomous characteristic, but rather there are degrees of deceptiveness. Bosworth (2006) suggested that the spectrum of deceptiveness spans from completely non-deceptive goods which every consumer is able to identify as fakes, to those that are 'superdeceptive' and appear identical to the original to the extent that distinction between fake and genuine is practically

impossible. The 'degree of deceptiveness' is not only a material characteristic of the product, but rather, as Eisend and Schuchert-Güler (2006) have recently argued, it depends on the consumer's awareness of the existence of counterfeits in the market, as well as their knowledge and experience/or familiarity with a particular product. More recently, the OECD (2007) asserted that the deceptiveness of a product is also contingent on the ability of the individual consumer to distinguish between genuine and fakes.

The various types of classifications reviewed above are useful for organizing knowledge and consolidating the discourse on the topic, but it is important to note that counterfeiters do not restrict their activity to certain types or categories of products (although they seem to favor some over others), nor do they focus exclusively on the most expensive goods (OECD, 2007). Rather they target a wide variety of goods (Balfour, 2005) – with only a few types 'escaping' their attention (Rutter & Bryce, 2008) –, and they do so by employing numerous counterfeiting strategies presented in Table 2.1 in their efforts to "circumvent supply-chain security systems, controlling efforts (across and between borders) and to defraud the vigilance of consumers and policing agents" (Fejes & Wilson, 2013, p. 2).

Table 2.1. Genuine – Counterfeit continuum[17]

Genuine	Seconds	Diverted	Over-runs	Adulterated	Tampered	Counterfeit	
						Low quality	*High quality*
Original product covered by manufacturer warranty	Manufacturer authorized product with defects or out of date	Legitimate or genuine product sold/distributed outside of the intended market	Legitimate product made in excess of production agreements; May or may not be up to original standards	A component of the finished product is fraudulent	Legitimate product and packaging that is used in a fraudulent way	Product not up to original standards, but bears some resemblance with the original	Illegitimate product designed to bear similarity with the original product on key attributes

---

[17] Adapted from Gentry et al. (2001) and Spink & Fejes (2012).

Magnitude of counterfeit trade

Some sources indicate that product counterfeiting came into the attention of the US government more than 100 years ago (Chaudury & Zimmerman, 2009), but recent alarming estimates regarding the prevalence and magnitude of counterfeit trade (OECD, 2007), as well as emerging links with international organized crime (Hetzer, 2002) and terrorist organizations[18] (Pollinger, 2008; Sullivan, Chermak, Wilson, & Freilich, 2014; The links between intellectual property crime and terrorist financing, 2003; Treverton et al., 2009), have (at least in the U.S.) undeniably boosted the priority level of product counterfeiting as a public policy problem requiring immediate attention. Notwithstanding this heightened attention conferred by estimates and dangerous links, public policy decisions with regards to countermeasures and prioritization of resources towards laws and regulations still hinge on the quantification of the magnitude of counterfeit trade, on a reliable approximation of the risks and potential for public health and economic harm (Spink & Fejes, 2012). In addition, a methodologically rigorous quantification would also be an essential contribution to the more comprehensive understanding of the phenomenon. Accordingly, several attempts at measuring the international trade in fake goods and assessing its global economic impact have been made in recent years, but the illicit nature of product counterfeiting makes the estimation of economic impact "extremely difficult" (OECD, 2007; GAO, 2010, p. 15; Spink & Fejes, 2012).

Most estimates in circulation can be traced back to three 'core' (well-established and widely referenced) estimates[19] (Spink & Fejes, 2012). Approximations from these reputable

---

[18] Furnham and Valgeirsson (2007) reported that "…counterfeit merchandise, ranging from 'knockoff' clothes brands to electrical parts are funding terrorist and criminal organizations, including Al-Qaeda, the Mafia and the Irish Republican Army" while links between counterfeiting and other groups such as "Hezbollah, Basque ETA, Chinese Triad gangs, the Japanese Yakuza, the Russian Mafia and more" have also been found (p. 678).

[19] These "core" document are: the Organization for Economic Cooperation and Development's (2008) report on 'The Economic Impact of Counterfeiting and Piracy'; the estimate by the Counterfeiting Intelligence Bureau (CIB, 1997) of the International Chamber of Commerce; and the Federal Bureau of Investigation (FBI, 2002) which

sources place the size of counterfeit trade around "5–7% of world trade" (CIB, 1997) with reported values "up to USD 200 billion in 2005" (OECD, 2007). However, the accuracy of these estimates is questionable, as recent reviews of their methodologies have shown that not only are some of these estimates outdated (e.g., CIB, 1997), but some also lack discussion of the methodology used in its development (e.g., FBI, 2002). Some reviews have reached the conclusion that no appropriate methodologies for assessing the magnitude of product counterfeiting exist at this time[20] (GAO, 2010; Spink & Fejes, 2012). These issues are exacerbated by the aforementioned conflation of piracy and counterfeiting. Nevertheless, although the information on the economic impact of product counterfeiting is limited, and the true extent of counterfeit trade is unknown and potentially unknowable (Spink & Fejes, 2012), most assessments do point to a substantial and mounting problem which causes total losses of hundreds of billions of dollars (BASCAP, 2011; IACC, 2013; OECD, 2007).

With regards to the magnitude of counterfeit trade in Romania, although several anti-counterfeiting initiatives exist (E.g., Romanian Anti-Counterfeiting Association; The National Anti-Counterfeiting Program; stoppirateria.ro; etc.), data and research on the issue are limited, while publicly available data are most often outdated. One notable exception is a study[21] exploring public perception regarding the pervasiveness and the effects of counterfeiting on Romanian economy, as well as the (perceived) necessary countermeasures to contain/eradicate the phenomenon (INSOMAR, 2005), although this too is somewhat dated.

---

estimated the magnitude of counterfeit trade in the United States to be "$200–250 billion" (FBI, 2002; Spink & Fejes, 2012). These estimates are not only widely referenced but also widely criticized: the CIB estimate is reported as an "educated guess", with no description of a methodology that would support it (OECD, 2007); the FBI estimate, which was originally a two page press release had no discussion of the methodology used in its development; while the OECD estimate (the most methodologically sound of the three), is based on incomplete information (GAO, 2010).

[20] For a more detailed discussion see Spink & Fejes, 2012.

[21] Commissioned by the National Association for Consumer Protection and Promotion of Products and Services in Romania (the developer of the National Anti-Counterfeiting Program) and conducted by the National Institute for Public Opinion Studies and Marketing (INSOMAR, 2005).

With regards to the magnitude of counterfeit trade, the STOP Pirateria governmental initiative (indicating the Central Unit for Intelligence Analysis within the General Inspectorate of Romanian Police as the source of the data) reported in 2008 that, compared to the European Union (EU) average of 35%, Romania and Bulgaria have the highest piracy rates (68%) in the EU (STOP Pirateria, 2008). According to the same source, authorities have identified on Romanian territory mostly textile goods (apparel), shoes and other leather goods, personal hygiene products (including perfumes), as well as mobile phones, electronics and accessories (STOP Pirateria, 2008). In addition, aggregate level data compiled by the European Commission (2014) also suggest that apparel and accessories[22], shoes[23] and electronics[24] are among the most seized goods within the EU states. These figures lend some support to the choice of goods to be included in the present study (counterfeit apparel, including accessories; perfumes and electronics), although the numbers should be treated with caution. This is due mainly to the fact that they confound counterfeit goods and pirated goods, and also due to the lack of corroboration from other dependable sources.

Economic and public health consequences

The effects of counterfeits on the profits of legitimate manufacturers and brand owners are evident, but counterfeits pose a threat not only to the bottom line of companies but to the economy as a whole, causing system-wide monetary and non-monetary losses[25]. Fakes divert

---

[22] Apparel: in 2013 around 18000 cases identified, consisting of more than 5 million articles, summing over €100 million in retail value; Accessories (including watches, sunglasses, jewelry and bags): in 2013 around 22000 cases identified, consisting of more than 3 million articles, summing over €342 million in retail value (European Commission, 2014).

[23] Around 26000 cases were identified in 2013, consisting of more than 2,2 million articles, summing over €75 million in retail value (European Commission, 2014).

[24] Around 9500 cases identified in 2013, consisting of more than 2 million articles, summing over €72 million in retail value (European Commission, 2014).

[25] Some losses incurred by companies as a result of being targeted by counterfeiters are more difficult to monetize, but they can be devastating. These losses include: brand equity damage; declining consumer loyalty; displacement of management time; decreasing incentive for innovation and undesired knowledge transfer (Chaudury & Zimmerman, 2009; Post & Post, 2008).

revenues from law-abiding businesses through lost sales, other revenues or lost investments, to illegal ventures (OECD, 2007). They also drive up the cost of doing business through the expenses associated with company anti-counterfeiting efforts. In addition, the "reliability of supply chains that have national security or civilian safety significance" (GAO, 2010, p. 13) is also put at risk, as instances of counterfeits infiltrating legitimate supply chains can undermine the public confidence and produce economy-wide negative effects.

Furthermore, counterfeit trade places an escalating economic burden not only on companies, but also individuals, and governments. Governments face fiscal deficits which arise from lost tax revenues, job losses[26], rising enforcement costs, and mounting health care and social security expenses (Bates, 2005; Catton, n.d.; Kelesidis et al., 2007). Administrations taking on the difficult job of tackling IP infringements face additional costs such as tracking down, convicting and incarcerating counterfeiters, seizing, warehousing and destroying counterfeit goods, as well as expenses with training officers to recognize counterfeit products.

The potentially devastating public health threat that counterfeits represent is even more alarming than the economic effects. Risks to the wellbeing of consumers can be direct (e.g., counterfeit drugs containing toxic ingredients that cause direct, immediate harm to consumers) or indirect (e.g., insufficient ingredients in pharmaceuticals), and can "range from mild to life-threatening" (OECD, 2007, p. 13). Although it is difficult to link and attribute accidents to counterfeiting cases, incidents caused by counterfeit products may result in loss of ability to work and increased healthcare expenses for both the affected individuals, as well as for the government. Irrespective of the nature of the threat (economic or public health), their quantification is as difficult as that of gaging the magnitude of counterfeit trade.

---

[26] The U.S. Customs has estimated that 750,000 jobs were lost as a result of counterfeit trade in 1993 alone (Trademark Counterfeiting, 1997).

Consumption of counterfeit goods

The consumption of infringing products has always been an essential part of the counterfeiting phenomenon, insofar that some scholars have argued that if consumers were not purchasing counterfeit products, counterfeiting would not be an issue (Bloch, Bush, & Campbell, 1993; Chakraborty, Allred, & Bristol, 1996; Chakraborty, Allred, Sukhdial, & Bristol, 1997). Although the issue of 'demand' is not clear cut – since it is debatable if and to what extent we can talk about 'demand' in the case of so-called 'super-deceptive' goods (Bosworth, 2006) –, it is safe to say that 'demand' for fake goods is what (partially) drives the manufacturing and the trade of fake goods.

Demand for such goods has long been at the forefront of research on the topic of counterfeiting (Cesareo, 2015; Staake et al., 2009). Accordingly, the consumption of counterfeit goods is significantly more researched than other aspects of the phenomenon, although there are still many facets of the demand that need to be studied (Cesareo, 2015; Staake et al., 2009). Despite of this heightened focus, data on the amount of counterfeit goods consumed globally is scarce as well as inexact, even if some data from self-reports at country level do exist (OECD, 2007). For example, results of a study commissioned by the U.S. Chamber of Commerce and conducted by Gallup (2007) suggest that the number of individuals[27] purchasing counterfeit goods in the U.S. exhibited a steady growth in the past decade. Even though these results are somewhat dated (see Figure 2.1), the results indicate that while in 2005 only 13% of panel participants have admitted to purchasing fake goods; in 2007 this number rose to 22% (US Chamber of Commerce, 2007). This can be seen as a significant increase in consumption. However, since the study covers a span of only three years, it is difficult to establish whether a

---

[27] Individuals reported that they have either knowingly purchased fake goods or that they suspected that the products purchased were not genuine, but the study makes no differentiation between the two.

trend exists. In addition, although the increase is disconcerting, it is important to note that the study conflated pirated goods (movies, music) with manufactured fakes, thus neither the real volume of counterfeit purchase in the USA is known, nor whether the observed increase is due to copyright infringing or trademark infringing goods.

Figure 2.1. USA consumers reporting having made a counterfeit purchase in 2006, by age.[28]
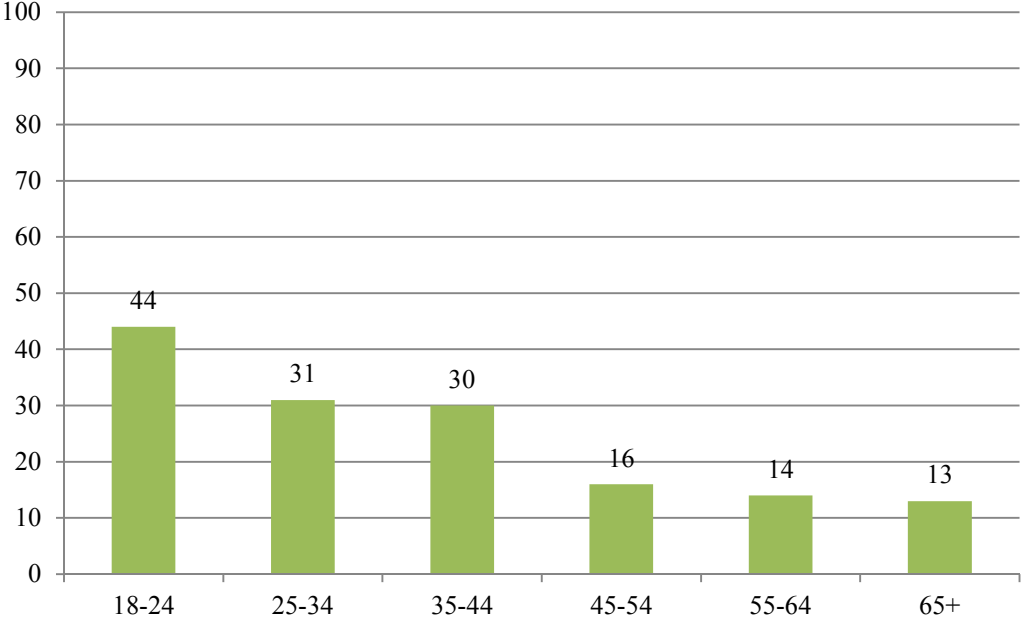
By contrast, a more recent McKinsey study on Chinese consumers (Atsmon, Dixit, & Wu, 2011) suggests an inverse trend to that reported by Gallup in the U.S. (US Chamber of Commerce, 2007). The findings revealed that Chinese consumers increasingly aim to purchase genuine products, and have expressed less willingness to purchase counterfeits.[29] Given the fact that China is recognized to be among the largest producer and exporter of counterfeit goods (OECD, 2007; GAO, 2010), these results seem counterintuitive. Some scholars have suggested

---

[28] Adapted from US Chamber of Commerce (2007).
[29] For example, the amount of those admitting to willfully purchasing fake jewelry has dropped from 31% in 2008 to 12% in 2010 (Atsmon, Dixit, & Wu, 2011).

that this may be due to the cultural factor of not "losing face" generating a strong social pressure with regards to consumption of counterfeits, but which may not have the same effect in case of production of fake goods (Kollmannová, 2012). These findings suggest that consumption of fakes might be influenced by cultural factors, but as previous research has revealed, these are but one of the host of factors that influence purchasing behavior, although multiple studies point to cost as a key driver for the consumption of fake goods, indicating that lower price and availability is the main reasons for purchase (BASCAP, 2009; Berland, 2013).

Ability to differentiate between genuine and counterfeit goods

Since consumers can both knowingly (consumer "accomplices" – Bloch, Bush, & Campbell, 1993, p. 27), and unknowingly fuel the demand for illicit products, an important notion merits consideration when it comes to consumption of counterfeit goods: the ability of consumers to differentiate counterfeit goods from genuine products. The differentiation between consumers is critical not only because of policies criminalizing the willful purchase of fake goods (we must differentiate between consumers who knowingly and intentionally purchase counterfeit products, from those who are deceived – OECD, 2007), but also because consumer product authentication is a critical component of counterfeit purchasing behavior (Fejes & Wilson, 2013). Despite its importance, research on how consumers differentiate between genuine and fake goods is lacking.

A recent analysis revealed that consumers use both intrinsic (tangible physical and performance attributes), and extrinsic (attributes external to the product) cues in their attempt to authenticate a product (Fejes & Wilson, 2013). The authors also proposed a theoretical framework to understand the process through which consumers differentiate between counterfeit

and genuine products. This framework delineated the consumer authentication process, summarized the cue selection, the factors influencing the selection, as well as the effect of the process on purchasing decisions. According to this framework, buyers engage in the authentication process only if there is an indication the product may be fraudulent. Thus, awareness of consumers regarding the existence of counterfeits in the market as well as the intrinsic/extrinsic cues is necessary to the authentication process as this is decisive in initiating the process and shapes the pool of cues available to consumers for selection and use. The specific informational cues associated with a product include 'simple' ones such as price, purchase location, the arrangement and the type/nature of the sales outlet, poor packaging and printing, product quality, brand and store name, as well as retailer reputation, but also more complex ones (e.g., product quality) which require prior knowledge and consumer experience.

The consumer product authentication process is a highly subjective and complex process influenced by a host of factors and characterized by an intricate relationship between variables, but at the end of it the consumer should be able to decide in which of the two categories (genuine or fake) to place the product under evaluation. However, the process is not infallible, and consumers may still be deceived by fake merchandise, or may proceed with the purchase despite the inability to determine in which of the two categories (genuine or fake) to place the product under evaluation. This decision depends on their motivation for purchase, their purchasing behavior (rational vs. emotional), and whether they are risk takers or risk avoiders (Fejes & Wilson, 2013, p. 18).

Although the framework is comprehensive, an empirical assessment of its validity is not available at the moment. Furthermore, it is important to mention that consumers may be willing to knowingly purchase counterfeit items if they perceive these products to possess certain

important attributes similar to the originals (Wee et al., 1995), and that their willingness to purchase is influenced not only by their ability to authenticate, but also by a host of other factors such as price, the "scarcity" of the original product (Eisend & Schuchert-Güler, 2006) and the attitude of the consumer toward counterfeiting and piracy (Ang et al., 2001). The discussion now turns to these other factors, especially those that research has shown to have a significant bearing on counterfeit consumption.

Factors influencing the purchase of counterfeit goods

Penz and Stöttinger (2005) indicated that in the context of counterfeit purchase "consumer-related drivers have a stronger effect than supplier-related factors" (p. 572), and consumer characteristics have long been considered important factors in counterfeit purchasing decisions. One factor in particular, the attitude[30] of consumers towards fake goods and counterfeiting in general has been extensively studied (Cordell et al., 1996; de Matos et al., 2007; Phau et al., 2009; Swami et al., 2009; Wee et al., 1995). Studies have shown that "consumer intentions to buy counterfeited products are dependent on the attitudes they have toward counterfeits" (de Matos et al., 2007; p. 36), and that favorable attitudes toward counterfeiting increase the likelihood that an individual will consider the purchase of counterfeit products (Wee et al., 1995). It is important to note that some have also found that, when compared to other factors (such as significantly cheaper price or the embarrassment potential – Penz & Stöttinger, 2005), attitude towards counterfeiting was less important driver of counterfeit purchase. Nevertheless, research on the topic has regularly found attitude toward counterfeits to be a significant predictor of willingness to purchase (Swami et al., 2009; Furnham & Valgeirsson, 2007; Bian & Veloutsou, 2007; Koklic, 2011). It is however important to note two things. First

---

[30] Attitude can be defined as the "learned predisposition to behave in a consistently favorable or unfavorable manner with respect to a given object" (Schiffman & Kanuk, 2014, p. 228).

of all, as noted by Penz and Stöttinger, 2005, attitudes towards a behavior (i.e., the act of counterfeiting) are better predictors of behavior (Fishbein & Ajzen, 1975) than attitude towards objects (i.e., a counterfeit item). Second, it is important to keep in mind that most studies addressing the issue have chiefly relied on Asian and European convenience samples of student consumers, and have concentrated on electronics, and digital products (e.g., Albers-Miller, 1999; Ang, et al., 2001), while only a few have targeted U.S. based or non-student purchasers, or have included other types of goods (Carpenter & Edwards, 2013). As a consequence, relatively little findings can be generalized beyond a certain geographic setting or a certain type of consumer demographic.

Notwithstanding the limitations of the research on the topic, studies have revealed various aspects of the attitude towards a counterfeit product or the behavior of purchasing fakes, and how these attitudes influence purchasing decisions. For example, some findings suggest that attitudes can vary greatly between various parts of the globe, but also within countries as well. Accordingly, Kollmannová (2012) indicated that the majority of the Slovak society does not view consumption of counterfeits as shameful behavior, but also noted the attitudinal differences between consumers in the Western and Eastern parts of Europe, which "have a different history, social values and also education towards counterfeit goods" (p. 23). In addition, a comparison of UK and Chinese consumers by Bian and Velutsou (2007) provided further evidence in terms of attitudinal differences in different cultures and geographical locations. Their findings revealed that, although consumers from both countries view counterfeits as being of lesser quality (than genuine or non-branded goods) they see them as an acceptable choice due to their (lower) price. Interestingly, compared to the UK respondents, fakes were seen as less acceptable by Chinese consumers (Bian & Veloutsou, 2007), suggesting perhaps the influence of the aforementioned

cultural factor of 'not losing face'. Yet others have found that differences in attitudes can vary within a country as well. A city-by-city comparison of Chinese consumers by Cheung and Prendergast (2006) indicated that Shanghai and Hong Kong buyers "are quite similar in terms of their attitudes and behaviour" (p. 457), while Wuhan buyers were "different from their counterparts in both the other cities" (p. 457). Similarly, study findings indicate *culture* as the main determinant for the consumption differences between French and English Canadian consumers (Mourali, Michel, & Frank, 2005). It is important to note at this point, that studies that make use of random samples to gauge the attitude towards counterfeits are the exception rather than the norm. Due to this heavy reliance on convenience samples, it is difficult to make meaningful cross-national comparisons of attitudes that would substantiate the claims of 'great variation' in attitude by geographic regions. Nevertheless, these findings, alongside criticisms of LSC to provide adequate explanations across different contexts (e.g., Marenin & Reisig, 1995), played an important role in the decision to include in this dissertation an examination of the effects that cultural differences may have on counterfeit consumption and on the ability of the two criminological theories to explain this deviant behavior.

Attitudinal differences have also been noted with regards to demographic characteristics of consumers, although results in this respect are mixed (e.g., Bloch, et al., 1993; Ang et al., 2001; Phau et al., 2009; Wee et al., 1995). For example, while Ang et al. (2001) found that the demographic characteristics significantly influenced attitude toward counterfeits (as males and those from lower income groups in their Singaporean sample held attitudes more favorable towards counterfeits), Cheung and Prendergast (2006) found no major difference in the demographic (especially in terms of age) and attitudinal profiles of 'heavy' and 'light' counterfeit buyers in their Chinese sample, although females were more likely to be heavy

buyers of counterfeit clothes, while males were more likely to be heavy buyers of pirated DVD's.

In addition, research also suggests that attitudes may act as mediator between so called 'antecedents' (such as perceived risk, whether consumers have purchased counterfeits before, subjective norm[31], consumer integrity, price-quality inference and personal gratification – de Matos et al., 2007) and purchasing intentions (de Matos et al., 2007; Huang et al., 2004; Swami et al, 2009), indicating that the purchasing behavior is a highly complex process. Adding to the complexity of this behavior, recent findings elaborate on the influence of emotions on the decision to buy fake goods. Although their study relies on eight focus groups in a "small EU country", Penz and Stöttinger's (2012), their findings are one of the most recent that "point to the fact that emotional aspects are important drivers of purchasing decisions" (p. 581).

Explanations of counterfeit purchase

As recent comprehensive reviews of the counterfeiting literature (e.g., Staake et al., 2009; Lee & Yoo, 2009) have indicated, various (mainly economic) theoretical models have been applied in the effort of explaining counterfeit purchase. The most commonly applied theories are those that have at their core the relation between attitude and behavior (Koklic, 2012). Accordingly, the Theory of Reasoned Action (TRA) (e.g., Chang, 1998; Peace et al., 2003; Shoham, 2008), or its expanded version, the Theory of Planned Behavior (TPB) (e.g., Penz and Stöttinger, 2005; de Matos et al., 2007) have been applied to both the consumption of counterfeit products as well as piracy. In addition, albeit less frequently, scholars have also applied other theoretical models, such as expected utility theory (e.g., Hennig-Thurau et al., 2007) or social exchange theory (e.g., Glass & Wood, 1996), among others (Koklic, 2012).

---

[31] The concept of subjective norm designates the (perceived) normative pressure that relevant/significant others exercise on an individual (Penz & Stöttinger, 2005) to perform or not to perform a behavior (Ajzen, 1991).

The most frequently applied attitude-behavior relations models, such as TRA and TPB, have as their central premise the interaction between attitudes, intentions and behavior (Bentler and Speckart, 1979). The main assumption within these models is that attitudes shape intentions and intentions shape an individual's behavior (Koklic, 2012). Accordingly, TRA, developed by Fishbein and Ajzen (1975, 1980) argues that behavioral intent is caused by a personal factor, consisting of the attitudes[32] of the individual towards a certain behavior, and a social factor, in the form of subjective norms (i.e., the individual's perception about what significant others think that he/she should do – Ajzen, 1991; a normative pressure exercised on the individual by relevant others – Penz & Stöttinger, 2005).

A later revision of the theory by Ajzen (1985) which intended to improve on the predictive power of TRA by including perceived behavioral control[33], led to the development of the TRA into the TPB. TPB predicts the occurrence of a particular intentional behavior, and argues that actual behavior is determined by the individual's intention to engage in a specific behavior, which is in turn determined by the attitude towards said behavior, as well as the subjective norm and the perceived behavioral control (Ajzen, 1991).

Head to head comparisons of the two theoretical models applied to software piracy (e.g., Chang, 1998) suggest that perceived behavioral control is a better predictor of behavioral intention than attitude, while more recent studies have also confirmed that "the strongest influence on the intention to buy fake products comes from perceived behavioral control" (Penz &Stöttinger, 2005). Although comprehensive tests of these theories are scarce, based on the evidence from the literature it can be said that, overall, TPB makes a strong contribution towards

---

[32] Ajzen and Fisbein (1980) define attitude as a person's general feeling of "favorableness or unfavorableness" with respect to a certain behavior.
[33] Behavioral control – or more precisely, perceived behavioral control – refers to the perception of the individual with respect to the ease or difficulty of performing the behavior of interest (Ajzen, 1991).

explaining the demand for pirated and counterfeit goods (Penz &Stöttinger, 2005, p. 572),

underlined by the ability to explain 65% of the variance in software piracy intentions (Peace et

al., 2003).

As it is apparent from this short overview of the theoretical models previously applied to

counterfeit purchasing behavior, there is dearth of rigorous tests as well as a lack of application

of criminological theories to the phenomenon[34]. The present study is aimed at (partially)

addressing this issue by testing the ability of two core criminological theories in explaining

volitional counterfeit purchase.

Theories of crime and deviance

As discussed in Chapter 1, the purchase of counterfeit goods is well within the realm of

the deviant behaviors that the general criminological theories of SLT and LSC claim to be able to

explain. The following sections will provide an overview of these two "evolving paradigms"

that (either consolidated into 'integrated' theories or as constituting elements for the formulation

of new theories) are fundamental to criminological reasoning (Cullen et al., 2006, p.5), as well as

a theoretical assessment of their appropriateness as explanations of volitional purchase of non-

deceptive counterfeit goods.

<u>*Social Learning Theory. Key concepts, propositions.*</u>

In criminology, SLT is identified primarily with Ronald Aker's dynamic learning theory,

which is rooted in Sutherland's differential association theory (DAT). DAT holds that criminal

behavior results from the same processes as other social behavior (Sutherland & Cressey, 1955,

p. 57), and that criminal behavior is learned mainly in intimate/primary groups via a process of

symbolic interaction with deviant others with whom one is in differential association (Akers,

---

[34] It is important to note the application of neutralization to software piracy (see Morris & Higgins, 2009; Morris & Higgins, 2010; Siponen, Vance, & Willison, 2012).

2000; Sutherland & Cressey, 1955, p. 77). The expansion by Burgess and Akers (1966) to include operant and respondent conditioning with the aim to explicate the learning mechanisms left unspecified by Sutherland led to differential association-reinforcement theory (DART), while Akers' subsequent revision of DART developed the model into what is known as SLT (Akers, 2000; Holt, 2009). The resulting theoretical model of SLT is a general theory that "offers an explanation of the acquisition, maintenance, and change in criminal and deviant behavior that embraces social, nonsocial and cultural factors operating both to motivate and control criminal behavior and both to promote and undermine conformity" (Akers & Jensen, 2006, p. 38). It is broader than its predecessors, and it retains and integrates all the differential association processes contained within DAT (Akers, 2000).

In brief, SLT postulates that the same learning process in a context of social structure, interaction, and situation, produces both conforming and deviant behavior (Akers, 1998, 2000). Accordingly, crime is a learned behavior that results from the interaction of four chief components (Akers & Jensen, 2006; Holt, 2009; Holt, Burruss, & Bossler, 2010), concepts around which SL is built: *differential association, definitions, differential reinforcement and imitation* (Akers, 1998).

The social learning process described by the theory is complex, with reciprocal and feedback effects between its four main sets of variables, and it is described by Akers (1998) as following a typical temporal sequence. SLT proposes that differential association will occur first, and that deviant associations will typically precede the onset of delinquent behavior (although the reverse is not excluded) (Akers et al., 1979; Akers 2000). Then, in the context of the groups with which one is in differential association, the individual is exposed to (normative) definitions that are favorable or unfavorable to illegal or conforming behavior (Akers et al.,

1979). The concept of definitions refers to attitudes and meanings that one attaches to a given behavior which are developed through imitation and differential reinforcement. In the context of SLT, definitions can be thought of as "orientations, rationalizations, definitions of the situation, and other attitudes that label the commission of an act as right or wrong, good or bad, desirable or undesirable, justified or unjustified" (Akers, 1998, p.78). These are both general (religious, moral and other conventional values/norms) and specific (those that guide an individual to particular acts) (Akers, 1998). Conventional beliefs disapprove of illegal acts as they are generally favorable to conforming behavior. Conversely, the definitions that are positive to law breaking (defining a criminal behavior as desirable) or are neutralizing (defining crime as permissible), make illegal acts acceptable or favor their commission by justifying or excusing it (Akers, 1998, 2000; Pratt et al., 2010). In SLT, neutralizing definitions – which are conceptually similar to Bandura's (1996) concept of moral disengagement – are assumed to occur more frequently than positive definitions (Akers, 1998).

It is important to note that Sykes and Matza (1957) have similarly argued that delinquents generally adhere to conventional values, attitudes, and beliefs, but learn ways to neutralize or justify their criminal actions through rationalizations (Piquero, Tibbetts, & Blankenship, 2005; Sykes & Matza, 1957). These rationalizations, called neutralization techniques, are employed by delinquents as a means to enable themselves to engage in behavior which (in most circumstances) they believe is wrong (Costello, 2000; Piquero et al., 2005; Sykes & Matza, 1957).

The most important groups (in terms of development of definitions, models to imitate and as sources of differential reinforcement) are the primary ones (family, friends); while more remote groups/sources of attitudes and models (neighbors, schools, mass media, etc.) have

varying degrees of effects on the individual's propensity to engage in criminal behavior (Akers, 1998). Associations that are formed earlier, last longer, are more frequent and involve those with whom the individual has closer relationship have the greatest effect on individual behavior (Akers, 1998, 2000; Akers & Jensen, 2006).

Engaging in crime and committing the initial criminal act is a result of the balance of learned definitions, imitation of criminal models and the anticipated balance of reinforcement (Akers et al., 1979; Akers, 2000, p. 79): if the group is involved in deviant behavior, individuals in differential association with such groups are more likely to acquire definitions that define law-breaking as permissible, and to engage in deviant/criminal behavior. In the continuation of these acts, imitation becomes less important, but all three variables continue to have a facilitative effect, differential reinforcements (Akers, 1998, 2000; Holt, 2009) having the greatest effect on whether the behavior will be repeated and at what frequency (Akers et al., 1979; Akers, 2000). The consequences of the initial act will also affect the recurrence and continuation of the behavior, but also the definitions held by the individual (feedback effect). Definitions favorable to crime can also be applied retroactively which means that they may moderate the effect of negative sanctions (whether punishments by others or self-inflicted) (Akers et al., 1979).

The appropriateness of SLT as an explanation of counterfeit purchase.

SLT, as one of the most frequently tested criminological theories (Akers & Jensen, 2006; Pratt et al., 2010) that has been very successful in explaining individual level participation in a variety of offenses and deviant behaviors (e.g., Akers, 1998; Akers et al., 1979; Holt et al., 2010; Winfree & Bernat, 1998; Warr, 2005), holds great promise in terms of explaining willful purchase of counterfeits. An examination of how the propositions of the theory could 'translate' to willful purchase of counterfeit goods is valuable at this point.

The theory proposes that individuals learn definitions conducive or unfavorable to criminal/deviant behavior which identify the commission of an act as right or wrong, justified or unjustified in the context of groups with which one is in differential association (Akers, 1998), and criminological research has found evidence consistent with this claim. The claim that one may believe that it is morally wrong to engage in some crimes (e.g., theft), but at the same time rationalize that it is acceptable to break laws or societal norms proscribing other types of crimes/deviant behaviors (e.g., smoking marijuana) (Akers 1998; 2000), may translate directly to the intentional consumption of fake goods. This supposition is substantiated by findings by Cordell et al. (1996) which indicated that more positive attitude toward lawfulness negatively influences the willingness to purchase counterfeits. Accordingly, it is plausible that individuals may hold that it is wrong to steal (for example), but may rationalize victimless crimes (as product counterfeiting and piracy are generally –inaccurately – perceived; see Chaudhry, Cordell and Zimmerman, 2005) as being entirely acceptable. These 'definitions' provide the mind-set which, given the opportunity, makes the individual more willing to engage in the criminal or deviant behavior (Akers, 2000). Therefore, the more neutralizing and positive definitions individual possesses, the more likely it is that – given the opportunity – he/she will engage in deviance/commit a crime, (Akers and Jensen, 2006; Akers and Lee, 1996). Accordingly, individuals may learn (positive) definitions that define the behavior as totally acceptable (being 'smart' or 'savvy' shoppers – see Tom et al., 1998; Penz & Stöttinger, 2005), while in countries where counterfeit purchase is illegal (France; Italy) or just frowned upon, the learned neutralizing definitions may lead individuals to rationalize that although prohibited, counterfeits don't harm anyone.

According to Akers et al. (1979) these definitions favorable to crime can also be applied retroactively while research on consumer behavior also suggests that buyers of counterfeit products try to legitimate their behavior and experience reasons for justifications (Eisend & Schuchert-Güler, 2006). It is important to mention that some definitions may be held so intensely that they "almost require" the violation of the law (Akers, 2000, p. 77-78). Ideological motivation for engaging in the production of counterfeits ("intent to harm people" – GAO, 2008, p.62; OECD, 2007) or in their acquisition (anti-capitalists – Rutter & Bryce, 2008), may be examples of such definitions.

Furthermore, SLT claims that in addition to supplying models to imitate, primary and remote groups provide social reinforcement for engaging in deviant or criminal behavior. Consumption of fakes is no different from other deviant behaviors in this sense: both proximal and distal groups may serve as models to emulate as well as provide the impetus for individuals to engage in the deviant behavior. Previous studies suggest that "friends and relatives may act as inhibitors or contributors to the consumption of counterfeits" (Lee & Yoo, 2009, p. 16), depending on whether they approve or disprove of the behavior. However, how social norms and peer pressure affect counterfeit purchasing behavior has not yet been investigated (Lee & Yoo, 2009). In addition, both the continuation of individual involvement in counterfeit purchase, and the rate of their participation depend on the actual consequences (social and nonsocial reinforcers and punishers) (Akers et al., 1979, p. 638) of the behavior. Consequences of engaging in the behavior are not the only factors (the other variables still play a role), but these affect the definitions held with regard to the behavior through the feedback effect. Of course, consequences (the actual consequences of the act, as well as the actual and anticipated reactions of others) will differ based on location in a purchase prohibiting or purchase permitting country

(based either on legislative prohibitions or cultural proscription) which in turn will have an influence on the repetition of the behavior and the definitions held by the individual.

Based on this theoretical analysis, it can be said that, overall, propositions of SLT appear to be in line with previous research findings with regards to volitional purchase of counterfeit goods. In addition, it also appears 'capable' of adding another item on the already lengthy list of successfully explained deviant behaviors.

Low Self-Control Theory. Key concepts, propositions.

Both SLT and LSC theory can be traced back to a common predecessor in the form of the Chicago School of criminology (Cullen et al, 2006), Hirschi (1969) being responsible for separating them into distinct, incompatible perspectives by claiming the reconciliation of their underlying assumptions to be very difficult (Cullen et al, 2006; Kornhauser, 1978). LSC posits itself as a general theory that explains all individual differences in the 'propensity' to refrain from or to engage in crime and deviance "at all ages, and under all circumstances" (Akers, 2000, p. 110; Gottfredson & Hirschi, 1990; Pratt & Cullen, 2000). Similarly to other control theories, LSC assumes that people are alike in that they naturally pursue their own interests (Gottfredson & Hirschi, 1990, p.117), and that crime (defined as acts of force or fraud) – as well as analogous behaviors that are not illegal such as drinking– are attractive to individuals because they provide instant gratification. LSC also assumes that individuals will use whatever means available to them for the purposes of gratification, unless socialized to the contrary (Gottfredson & Hirschi, 1990). Motivation to engage in crime is thus seen as relatively constant across people (Hirschi & Gottfredson, 1993), while the opportunity to commit "some form of crime" is seen as ubiquitous (although it may be severely limited for particular crimes) (Gottfredson & Hirschi, 1990, p. 50).

LSC is sometimes portrayed as a monocausal theory, whose core concept, low self-control – which designates "the individual characteristic relevant to the commission of criminal acts" (Gottfredson & Hirschi, 1990, p. 88) – is intended to explain all crime, as it accounts for (relatively) time-stable individual differences in criminal behavior (Andrews & Bonta, 1998, p. 125). Gottfredson (2006) has recently dismissed the claim of monocausality, and maintained that self-control is the most important individual-difference cause of crime, but not the only cause, as crime is also influenced by age, opportunity[35] and the gratifying nature of the crime itself (Cullen et al, 2006, p. 7; Gottfredson, 2006).

In accordance with Gottfredson's (2006) recent claims, the original statement of the theory seems to accord precedence to the concept of low self-control in the explanation of crime. LSC effectively states that low self-control coupled with opportunity leads to the commission of crime or analogous behaviors (depending on situational factors and individual characteristics), because crimes are simple and easy to commit (require little skill, planning or specialization), and offer easy/immediate gratification (opposed to few or meager long term benefits) to people who wish to give in to their desires at once (Gottfredson & Hirschi, 1990). According to the proponents of SC, the major 'cause' of low self-control is ineffective child rearing, the ineffective and incomplete socialization by parents (Gottfredson & Hirschi 1990; 1993). Child rearing practices also account for differences in self-control among racial/ethnic groups (and

---

[35] At this point it is important to briefly discuss the difference in the perspective of SLT and LSC with regards to opportunity. In the view of SLT, opportunity – or the "configuration of actual or potential rewards/costs" (Akers, 2011, p. 162) –, and even self-control, operates through the social learning process (Akers, 2011, p. 161). Accordingly, "whether a deviant act will be committed in a situation that presents (or is defined by the person as presenting) the opportunity depends on the learning history of the individual, and the set of reinforcement contingencies in that situation" (Akers, 2011, p. xxiv). Since, all of the social learning variables are part of an underlying process operates in each individual's learning history and in the immediate situation in which the opportunity for a crime occurs (Akers, 2000), individuals will not commit the crime unless they have learned to define the given need or opportunity situation as one in which a crime is appropriate (Akers, 2011, p. 27-28). From this brief overview it is evident how opportunity is viewed differently by the two theories, as well as how the opportunity to engage in a deviant act is different from social learning.

between sexes) in the U.S. (Gottfredson & Hirschi, 1990, p. 153). Once established, self-control is relatively stable over the life course and it is unaffected by other institutions, meaning that individuals with low self-control may commit less crimes with age, but this is the effect of age, not a change in self-control (Gottfredson & Hirschi, 1990, p 144).

According to LSC individuals with high self-control will be "substantially less likely at all periods of life to engage in criminal acts" (Gottfredson & Hirschi, 1990, p. 89). Conversely, individuals with low self-control (described as impulsive, insensitive, short sighted, risk-takers exhibiting a preference for simple physical tasks – Gottfredson & Hirschi, 1990, p 89-90; Burruss et al., 2013), are more likely to be unable to resist the omnipresent lure of easy and immediate gratification provided by criminal acts (Pratt & Cullen, 2000) and exhibit great variability in the kinds of criminal acts they engage in (Gottfredson & Hirschi, 1990, p 89-90). However, low self-control does not necessarily lead to crime: it can be counteracted by situation factors and individual properties other than self-control (Benson & Moore, 1992; Gottfredson & Hirschi, 1990. p. 89; Grasmick et al, 1993; Turner & Piquero, 2002). In the absence of opportunities for crime, low self-control may lead to acts analogous to crime such as smoking, alcohol abuse, and other "risky behavior" (Gottfredson & Hirschi, 1990; Reed & Yeager, 1996, p. 360).

In addition to claims of monocausality, criticisms of inadequate discussions of the role of opportunity, tautology (Akers, 1991; Geis, 2000), limited applicability and limitations to its 'general nature' (Benson & Moore, 1992; Geis, 2000; Hay 2001; Marenin & Reisig, 1995; Reed & Yeager, 1996) as well as the failure to discuss how SC differs/does not differ from its intellectual predecessor (social bond theory) (Akers, 1991, Cullen et al., 2006) are some of the many controversies surrounding Gottfredson and Hirschi's (1990) 'general theory of crime.

Notwithstanding these criticisms, LSC is one of the most frequently discussed and researched criminological theories that has amassed considerable amount of empirical support (Pratt & Cullen, 2000). As such, it may prove useful in explaining the intentional purchase of counterfeit goods. A theoretical appraisal of its usefulness in explaining this particular deviant behavior follows.

The suitability of LSC to explain consumption of counterfeit goods.

Several elements of Gottfredson and Hirschi's (1990) theory are applicable to the consumption of counterfeit goods, and the theory as a whole appears to be suited to offer an explanation. First of all, LSC describes criminal/analogous acts as being exciting, risky or thrilling (p.89), taking little time and energy and providing immediate gratification. The purchase of fake goods can be construed as an analogous behavior. This behavior fits this 'profile', since the acquisition of branded items at (often significantly) lower price can give the thrilling experience of 'getting a bargain' as well as the fulfilment of being a 'smart shopper' who purposely purchases counterfeit goods to demonstrate his/hers consumer shrewdness (Tom et al., 1998, p. 405; Penz & Stöttinger, 2005).

Furthermore, LSC describes individuals with low self-control who engage in crime or so called analogous (deviant) behaviors as lacking the foresight to weigh short- and long-term advantages, as favoring simple tasks and course of action, and physical rather than cognitive activity (Gottfredson & Hirschi, 1990; Geis, 2000; Marenin & Reisig, 1995). Upon an examination of the literature on consumers of counterfeit goods – although far from establishing a 'full profile' of the average consumer –, it is not far-fetched to conceive them as being oriented towards immediate gratification. This assertion is supported by the resemblance of elements of low self-control (impulsivity; risk-taking; short-sightedness; immediate gratification) with the

purchasing behavior identified in counterfeiting literature, as study findings suggest that some consumers buy counterfeit goods as a form of personal satisfaction (de Matos et al., 2007) to fulfill their desire for products that they cannot afford (Wee, Ta, & Cheok, 1995). The short-sightedness of consumers is seemingly contradicted by their concern that the counterfeit nature of the goods remains unknown to others (Hoe, Hogg, & Hart, 2003), but their failure to consider the implications of their actions on the economy or on their own health can be considered as an example of lack of foresight. Accordingly, based on those discussed above, it seems plausible that inadequate levels of self-control are related to higher rates of counterfeit consumption.

A couple of additional aspects of LSC warrant examination in the context of counterfeit purchase. First of all, as discussed previously, the logic of LSC, some research results, and indeed the authors themselves (see Gottfredson, 2006) seem to confer self-control a "more powerful role in accounting for individual differences in crime and analogous behavior" (Pratt & Cullen, 2000, p. 933). Nevertheless, the concept of opportunity in LSC – criticized as a "catchall refuge" that explains the other things otherwise unexplainable (such as 'rare' crimes), and for the lack of the proper development of the role it plays (Geis, 2000, p. 42) – is an important causal factor in explaining crime and deviant behavior (Benson & Moore, 1992). This may well be the case when it comes to counterfeit purchase, as opportunity (access to fake goods) may play a bigger role than in the case of other deviant behavior. Hirschi and Gottfredson (1993) see the effects of low self-control and opportunity on crime/deviant behavior as generally independent, but may interact for specific crimes/deviant behaviors. In the case of counterfeit purchase, an interplay between the two factors rather than an independent effect may exist. Although the examination of the existence of such interaction exceeds the scope of this dissertation, they do warrant further examination, and should be examined by future research.

Finally, as product counterfeiting (and implicitly consumption of counterfeit goods) is a global phenomenon, contextual and cultural differences may play a role and their examination is essential in order to establish the determinants of counterfeiting (Eisend & Schuchert-Güler, 2006). Accordingly Gottfredson and Hirschi's (1990) claim that LSC is able to explain crime across various contexts (although some scholars have provided evidence to the contrary and criticized this universalistic claim; e.g., Marenin & Reisig, 1995) is highly relevant in the context of this study. Whether this universalistic claim stands or not in the context of counterfeit purchase, remains to be seen, however, based on his theoretical appraisal, LSC appears to have potential as an adequate explanation of volitional counterfeit purchase. Nevertheless, the arguments presented here are a mere theoretical exercise without adequate empirical test; which is precisely what this study aims to achieve.

CHAPTER 3 : THE ROMANIAN CONTEXT

Rationale for study site selection

The study is set to take place in Romania, more precisely at Babeș-Bolyai University (BBU) located in the city of Cluj-Napoca, which is the former capital of the historical region of Transylvania. Accordingly, a discussion of the rationale for locale selection and of the study context is imperative.

Primarily, the study site allows the examination of the ability of both theories to offer adequate explanations in a setting that is significantly different from the US context, as one the chief aims of this study is to test the ability of SLT and LSC to provide adequate explanations of deviant behaviors outside of the socio-economic and political context in (and for) which they have been developed. In addition, the researchers' knowledge and understanding of the study locale allows a better comprehension of the influence that the local culture, and the socio-politic, historic, geographic and economic context may have on the study outcomes.

Furthermore, in addition to the placement of the research investigation in an understudied Eastern European country, the original study design aimed to include two distinct study sites. These were set in two major Romanian university centers with lengthy traditions (CNFIS, 2015): Babeș-Bolyai University, located in the former capital of Transylvania, Cluj-Napoca; and Alexandru Ioan Cuza University (AICU) located in the former capital of Moldavia: Iași. The use of two study sites would have allowed the assessment of whether subtle cultural differences (between populations of two historical regions) affect the explanatory power of the aforementioned theories, as well as the examination of whether differences in the opportunity structure[36] have a significant influence on purchasing behavior. The choice of the two locales

---

[36] Transylvania is located in the western part of the country where Romania borders Hungary (another EU state), while Moldavia is located in the north-eastern part of Romania, bordering two non-EU states (Ukraine and the

was based on sample similarities (student populations of two major state university centers located in cities that were drivers of both economic and cultural development of their respective regions), but also on important community dissimilarities (between the historical/cultural regions of Transylvania and Moldavia) highlighted by the divergence in "ethnicity, religious systems, former imperial influences, the level of socio-economic development and the historical vibrancy of civil society" (Bădescu & Sum, 2005, p. 118).

Regrettably, university policies (more precisely the lack of clear policies with regards to access to student population for the purposes of sociological research) have precluded the inclusion of Iași[37] in the study. Accordingly, other means of assessing subtle cultural differences had to be included in the study. Since BBU is the largest[38] and the highest ranked Romanian university[39], it attracts students from virtually every region of Romania, although some students choose universities that are closer to their home town due to financial reasons, or have a specific specialization that is not available at BBU. Consequently, the BBU student body is diverse in terms of regional cultural heritage, which (in theory) renders it appropriate for testing both whether subtle cultural differences affect the explanatory power of SLT and LSC, as well as an examination of the influence of opportunity differences. Correspondingly, the study was adapted by including measures (discussed in more detail in Chapter 4) that allowed an alternative measurement of these cultural differences.

The following sections provide an overview of the study locale, along with the description of the disparities between the major historical/cultural regions of Romania, followed

---

Republic of Moldova). Since non-EU countries are high on the list of sources for counterfeit goods entering the EU (OECD, 2007), it is expected that inhabitants of Moldavia have more opportunities to purchase counterfeit products than those living in Transylvania.

[37] The request for the authorization of the study at the Alexandru Ioan Cuza University (Registration nr. 7838/08.05.2015) has not been endorsed by the Rector's office, and no official response has been issued to this date.

[38] Based on the number of students enrolled in all specializations and levels of study (CNFIS, 2015).

[39] According to a recent Romanian university rankings by U-Multirank, which is "a user-driven, multidimensional, world ranking of universities and colleges" from the EU (European Commission, 2016, para. 1).

by a discussion on the importance of the variation between the regional cultures in terms of the theoretical explanations to be tested.

Romania, a culturally and ethnically diverse space: Concise overview of historical, cultural and economic differences between historical/cultural regions in Romania

Geographic and geo-political aspects

A member of European Union (EU) since 2007, Romania is often described as placed 'between the East and the West' (Hitchins, 2014), as being "at one and the same time, Balkan, Eastern European and Central European" (Boia, 2007, p. 12) in terms of geography, history, and culture, but "without belonging wholly to any of these divisions" (Boia, 2007, p. 12). In terms of geographical location, this country – that with its area of 238,391 km^2 (Posea, 2006; Tamura, 2004) is "slightly smaller than Oregon" (CIA, 2015) – is bordered by two fellow EU members in the West and South (Hungary and Bulgaria), by an official candidate for membership in the EU (Serbia) in the South-West, and by two non-EU states (Ukraine and the Republic of Moldova[40]) at the North and East. It is usually described as "situated in the geographical centre of Europe" (NIS, 2015a, p. 3) belonging either to "South-Eastern Europe" (Boia, 2007, p. 11), "East Central Europe" (Livezeanu, 2000, p. 8) or even "South-East of Central Europe" (NIS, 2015a; Posea, 2006). A parliamentary republic, Romania (from an administrative point of view) is divided into villages, communes (2986), towns (265), municipalities and counties (41 plus the municipality of Bucharest) (NIS, 2013, p. 5; Posea, 2006, p. 15), with Bucharest as its capital. These territorial divisions have been established during the communist regime, although they have suffered some alterations in terms of names and borders throughout the 40-year period (see Săgeată, 2013 for a

---

[40] For the purposes of disambiguation, it is important to stress that the sovereign country of the Republic of Moldova is distinct from the historical region (and medieval principality) of Moldavia, although some territorial overlap existed throughout history: it was part of Romania during the interwar period, but was incorporated into the Soviet Union until regaining its independence in 1991 (CIA, 2015). Accordingly, it is inhabited by Moldovans (who speak Moldavian, which is "virtually the same as the Romanian language" – CIA, 2015, Language section, para. 1), along with a significant Ukrainian and Russian-speaking minority.

thorough review). More recently, during the two decades following the fall of communism,

eight non-administrative territorial units called 'development regions' (see Figure 3.1) have been

established, each overarching several counties, but without legal entity (NIS, 2015a). These

have been since then consolidated into four macro-regions (NIS, 2015a), but despite the

recommendation of various scholars (see for example Jordan, 2005), they are not organized

based on the historic/cultural regions of Romania (discussed below), although some overlap does

exist.

Figure 3.1. Romania: current administrative-territorial organization and development regions [41]

Its moderate continental climate is a result of its location in the Northern hemisphere, more precisely between 43º 37' (Zimnicea) and 48º 15'(Horodiştea), Northern latitude, and between 20º 15' (Beba-Veche) and 29º 41' (Sulina) Eastern longitude (NIS, 2013; Posea, 2006, p. 15) but also of its topography. The Romanian landscape contains all the geographical landforms (with its geosystem almost equally divided between mountains, hills and plains), but is dominated by the curved Carpathian Mountains delimiting Transylvania from the Moldavian Plateau and the plains of Wallachia, the Romanian Plains and the Danube (Posea, 2006). It is within this region – often termed Carpato-Danubiano-Pontic (Posea, 2006) –where the young nation state of Romania has developed. The close intertwining of the local (cultural) identity with the geographic features of the land is evident not only though the primary identification of oneself as Transylvanian or Moldavian, but also in the local folklore.

Given that a thorough discussion of the tumultuous and complex history of Romania and its strong links to the geospatial characteristics exceeds the goal of this dissertation, the discussion will focus on a brief overview of the most important historical events that highlight the differences between the three major historical/geographic and cultural regions of Romania.

The birth of modern day Romania. From the principalities of Wallachia, Moldavia and Transylvania, through the Great Unification of 1918, the interwar period and the communist regime, to an EU member state: major historical events, people, society and economy

Romania's depiction as a 'borderland' between the East and the West is not due only to its geographic location (squarely on the 45th parallel, between the Balkan Peninsula and Eastern Europe), but also due to its historical position of being "on the edge of great political units and civilizations" (Boia, 2007, p. 12). Throughout history, various empires (the Roman, the Ottoman, the Austro-Hungarian and the Russian) intermittently dominated different regions of the territory that is now Romania, dictating not only politics, administrative organization

(systems and institutions), but also influencing economic development, as well as culture and religion. Alongside its geo-political location and the historical events that unfolded, the cultural influences of numerous nationalities (whether invaders or indigenous) and its position at the interface of three major religions (Catholic, Orthodox and Muslim) (Posea, 2006) have greatly shaped modern day Romania. Its placement at these 'crossroads' has significantly influenced the 'vacillation' of Romanians between the orientation towards the East or West, confronted with "the dilemma of choice between these two poles from the beginning of their statehood in the fourteenth century, when the principalities of Wallachia and Moldavia were founded" (Hitchins, 2014, p. 1) until the recent pledge to Europe as the Eastern border state of the EU (since 2007) and a NATO ally (since 2004).

From a historical point of view, Romania is a relatively young country formed by the union of the former principalities of Wallachia, Moldavia, and Transylvania along with its "adjoining districts of Maramureş, Crişana, and Banat" (Livezenau, 2000, p. 4) on December 1st 1918. This point in history referred to by Romanian historians as the Great Unification is a defining moment in the history of Modern Romania (Hitchins, 2014). It followed the previous unification of Moldavia and Wallachia, "which since the Middle Ages had shared not only the ethnicity and language of the majority population, but also political institutions, and even several princes" (Livezeanu, 2000, p. 4) until they united in 1859-61 under the name of the United Principalities, although recognized formally as independent by the European powers of the time only in 1878. Prior to the unification of 1918, Transylvania was an integral part of the Habsburg Empire (until 1918), while the rest of the country belonged to the Ottoman Empire (until 1877) (Bădescu & Sum, 2005, p. 119), although the regions were subject to frequent attacks and briefly belonged to other spheres of influence (Tatars, Mongolians, Russians just to name a few –

Cârciumaru, 2012) over their turbulent history. These profoundly different "imperial experiences" (Bădescu & Sum, 2005, p. 119) manifested themselves on various levels, such as different administrative systems and institutions (Calcan, 2010; Nimigeanu, 2002), ethnic composition and religious affiliation, leading to more pronounced historical and cultural differences between Transylvania and the rest of the country (Bădescu & Sum, 2005).

The Great Unification of 1918 also marked the beginning of a brief period, referred to as the interwar epoch (1918 – 1939), when after World War I "Romania-more than doubled its territory and population" through "the annexation of the provinces of Bessarabia-from Russia, Bukovina from Austria, and Transylvania from Hungary". The resulting 'Greater Romania' was understandably "ethnically and religiously … diverse" (Livezneanu, 2000, p. 9), as "Romanians constituted a little over two-thirds of the country's population, with a large Hungarian (or Magyar) minority in Transylvania, and smaller but sizable German, Ukrainian, and Russian minorities" (Livezeanu, 2000, p. 9), as well as significant Jewish groups living in the newly added province. Transylvania was not only "more ethnically diverse" than the rest of Romania, but also "exhibited higher level of religious pluralism" (Bădescu & Sum, 2005, p. 119), as "approximately half of the ethnic Romanians from Transylvania were Greek Catholics and the other half were of Orthodox denomination" while "most of the non-Romanian inhabitants of Transylvania were Catholics and Protestants"[42] (Bădescu & Sum, 2005, p. 119). In terms of ethnic composition interwar Romania had a population[43] of little over 18 million, consisting of

---

[42] Currently the dominant religious denomination is Orthodox (over 16 million), followed by Roman-Catholic (over 870,000) and Protestant denominations (just over 800,000) (INS, 2011).
[43] Current census data paint a similar picture although aside from the Hungarian ethnic population (1,227,623),German, Ukrainian and Russian populations have been severely reduced, while the Rroma population (621,573) has more than tripled compared to 1930 (INS, 2011). According to the most recent census data, the total stable population of Romania stands at 20,121,641 (INS, 2011), while population density in 2015 was 93,5 inhabitants/km^2(INS, 2015).

12.9 million Romanians, large Hungarian (1,425,507), German (745,421) and Jewish minorities

(728,115), with sizable Ukrainian, Russian and Bulgarian groups (Livezeanu, 2000, p. 10).

The end of World War II marked another significant moment as a result of the Paris

Peace Treaties of 1947, along with the 'redrawing' of the borders of many other small nations in

Central and Eastern Europe, the current borders of the country were delineated. Consequently,

modern day Romania is smaller than interwar Greater Romania, and it is "broadly speaking,

made up of three historical lands" (Boia, 2007, p. 12):

> Wallachia (known in Romanian as Țara Românească, the 'Romanian Land') to the south,
>
> between the Danube and the southern Carpathians; Moldavia to the east, between the
>
> Dniester and the eastern Carpathians; and Transylvania to the west (Boia, 2007, p. 12).

These regions correspond roughly to the three major natural units that make up the country and

are formed according to the main relief units: a mountainous region (Transylvania), a hilly

region (Moldavia), and a plain region (Wallachia) (Surd, 2005, p. 47). Although with the

exception of the "curve of the Carpathians" (Boia, 2007, p. 12) separating Transylvania from the

rest of the county, the Romanian landscape can be considered as forming a "geographically-

contiguous" (Livezeanu, 2000, p. 4) space, these regions are "disparate" in terms of history,

culture and economic characteristics (Livezeanu, 2000, p. 4). Despite the still enduring

rhetoric[44] of a 'unified and indivisible nation', portraying it as "unitary national state"[45] (Calcan,

2010, p. 27) "completely united in language, tradition and culture" (Livezeanu, 2000, p. 1),

Romania is still characterized by ethnic and regional diversity: a "multiethnic, multiregional, and

multicultural" (Livezeanu, 2000, p. 302) space, where "an extraordinary combination of ethnic

---

[44] Even recent scholarly works as the Psychology of the Romanian People (David, 2015) exhibit the tendency to stress the unitary and uniform cultural discourse, by minimizing the importance of the cultural differences between various historical regions, and relegating them the statute of local "nuances" (p. 172-173); although (as the author himself acknowledges), the validity of these conclusions are yet to be verified on a more representative sample.
[45] An ideal pursued by both extreme nationalists and mainstream politicians in interwar Romania (Livezeanu, 2000) and exacerbated by the nationalist assimilatory politics of the communist regime (Boia, 2001).

and cultural infusions from all directions" resulted in a country that has "assimilated, in different periods and in different ways from one region to another, elements as diverse as Turkish and French, Hungarian and Russian, Greek and German" (Boia, 2007, p. 13).

These influences were assimilated in different ways and to different degrees in the three main historical regions. Consequently, these regions present distinctive historical and cultural characteristics (Bădescu & Sum, 2005) despite Romania becoming a "highly centralized country" (Reianu & Barna, 2014, p. 63), where through the aggressive "nationalization of the towns, urban elites, and cultural institutions" (Livezeanu, 2000, p. 10) "regional identities were strongly subject to uniformization" (Reianu & Barna, 2014, p. 63), as the "cultural differences and identities have […] survived even to the communist regime" (Reianu & Barna, 2014, p. 63). This is no small feat as the Romanian Communist Party during a period of over 40 years of oppression (1946 – 1989) has labored relentless to construct the unitary national identity through efforts of assimilating ethnic minorities, by shaping – with the aid of the Romanian Orthodox Church – not only the culture but also the national identity of the Romanian society (Irimie, 2014) and by the reinterpretation and mutation of historical facts leading to the creation of historical myths that persist in the Romanian consciousness (Boia, 2001; Rura, 1961).

Despite these efforts, the regional cultural identities have survived, and while at odds with the notion (and rhetoric) of the 'national unitary state', continue to endure insofar that Boia (2007) recently noted that:

At the risk of gross simplification, we might say that Wallachia, bound as it is to the Danube, is predominantly Balkan; Moldavia looks not only south but also north, towards Poland, and east, in the direction of the Russian steppes; and Transylvania is part of Central Europe and belongs appreciably to the space of Western civilization. (p. 12)

Although 'painted with broad strokes' by Boia (2007), this succinct description of the distinctive cultural identities characterizing and defining Transylvanians (Ardeleni), Moldavians (Moldoveni) and Wallachians[46] (Regățeni – Livezeanu, 2000, p. 29) presents an accurate picture. Nevertheless, Boia himself (2007) noted that Romanian cultural identity landscape is even more complicated (see Figure 3.2):

> The three lands that make up modern Romania can themselves be divided into a number of regions. Wallachia comprises Oltenia, Muntenia and Dobrogea; Moldavia, as well as the core region of Moldavia itself, includes Bessarabia and Bukovina; and 'Transylvania' is used as a generic name for all of the lands west of the Carpathians, including the Banat, Crişana and Maramureş, as well as the historical principality of Transylvania. (p. 14-15)

Furthermore, Surd (2005) noted that:

> The inhabitants of these regions identify themselves with pride with such denominations as *oltean, ardelean, bucovinean*, etc., which resulted from their remarkable perception of the differences emerging from their relationship with the territory and the longer lasting influences of the outside populations. The consciousness of belonging to a territory and certain traditions has led to the cultural diversity of today's folklore. (p. 48)

---

[46] Wallachia also referred to as the Old Kingdom, or 'Regat' in Romanian, hence the name: Regățeni.

Figure 3.2. Historical/cultural regions in Romania[47]

.... Historical boundaries
_____ Boundaries adapted to the current administrative division into districts

He also stressed the fact that "the consciousness of belonging continues even today" and that this cultural and local identity greatly influences the individuals' "attachment to the territory" (Surd, 2005, p. 48), substantiated by findings from qualitative studies that suggest a strong identification with the local values and tradition (see for example Reianu & Barna, 2014). Nevertheless it is safe to say that, aside the ethnic identities, the dominant cultural identities in Romania are consistent with the three major historical regional divisions (Transylvania, Moldavia, Wallachia) (Boia, 2007), and that these take precedence over the smaller 'local denominations' mentioned by Surd (2005).

---

[47] Adapted from Jordan, 2005, p. 18.

In addition to those mentioned above, economic differences between Transylvania and the rest of Romania have existed throughout history, with Transylvania exhibiting "slightly higher figures" (Bădescu & Sum, 2005, p. 119) in term of socio-economic development. Diaconu (2014) noted that these "territorial development differences have historical, cultural and economic roots" (p. 75), as the foreign rules have had different effects on the economic performances of the historical regions (Murgescu, 2010). In addition, these gaps have widened since the fall of the communist regime in 1989, and the "significant development differences" (Diaconu, 2014, p. 75) among Romania's (historical) regions persist, with the North-East region[48] (see Figure 3.1) being the least developed (especially in comparison to the West region) and among the poorest regions in the EU (Bădescu & Sum, 2005; Diaconu, 2014). This has to be put in the wider economic context of the EU, in which Romania is still one of the poorest member states. Although Romania's gross domestic product (GDP) has exhibited a steady growth in the past 5 years, recording a 2.7% growth between 2004 and 2014(the third highest among member states), it is still among the laggards in terms of GDP per capita and purchasing power standards (PPS), surpassing only Bulgaria (Eurostat, 2015b). This is regardless of the fact that "most Member States that joined the EU in 2004, 2007 or 2013 moved closer to the EU average despite … setbacks during the financial and economic crisis" (Eurostat, 2015b, para. 6).

Even based on this very brief overview it is apparent that three historical regions exhibit manifest differences (especially Transylvania, as compared to the other two) in terms of geography, history, ethnic composition, culture, religion and economic prosperity, and that these persist to present day.

---

[48] The North East region approximately covers the historical region of Moldavia and includes the present day Suceava, Botoşani, Neamţ, Iaşi, Bacău, Vaslui counties.

The importance of the study locale, and of the cultural differences between historical/cultural regions in terms of the theoretical explanations of crime and deviance

Contexts matter. This is true in terms of committing a crime as well as in terms of theorizing about crime commission (Lilly, Cullen, & Ball, 2011). Different cultural backgrounds lead to different social norms (Swinyard et al., 1990), which in turn affect the individuals' behavior in terms of purchasing counterfeit goods. Accordingly, an examination of the role of culture is essential not only with regards to the theories tested in this dissertation, but also with regards to counterfeit purchase.

The necessity of examining the context in the case of SLT is evident, as the theory openly "embraces social, nonsocial and cultural factors operating both to motivate and control criminal behavior and both to promote and undermine conformity" (Akers & Jensen, 2006, p. 38), by claiming that the same learning process in *a context of social structure, interaction, and situation*, produces both conforming and deviant behavior (Akers, 1998, 2000). As social learning does not happen in a vacuum, differential association, the learning of definitions, differential reinforcement and imitation all occur within a cultural context which has to be taken into consideration when attempting to explain deviant or criminal behavior. In addition, aside from the immediate (or distal) situation (historical, political, cultural and economic) in which the learning occurs, social structure[49] and human interactions also influence this process. Attesting to the influence of culture on social structure López and Scott (2000) have argued that "social institutions have their basis in the culture that people share as members of a community" (p. 21), shared culture constituting an integral part of a social structure, insofar that social institutions vary from one culture to another (p. 31). Taking this into consideration, the present study will

---

[49] Social structure has been conceptualized in a number of ways, but the various uses of this concept can be categorized as referring to institutional, embodied or relational structures (López & Scott, 2000).

examine whether different cultural contexts matters with regards to SLT, especially in terms of learned definitions and differential reinforcement.

Conversely, Gottfredson and Hirschi claim that self-control (1990) "explains all crime, at all times, and, for that matter many forms of behavior that are not sanctioned by the state" (p. 117) accounting for all variations by sex, culture, age, and circumstances (Akers, 1991, p. 203). Accordingly, cultural differences should not affect the explanatory power of low self-control in terms of the volitional purchase of counterfeit goods. Despite this universalistic claim, LSC has been previously criticized for not being able to explain crime/deviance across contexts (see Marenin & Reisig, 1995). As this dissertation tests LSC in a new cultural setting, it obviously offers the opportunity to further assess this universalistic claim. Moreover, the existence of three distinct historical/cultural regions within the same country (where cultural differences are conceivable lesser than between two countries), offers the possibility of examining whether the explanatory power of low self-control is affected by small variations in cultural characteristics.

Both theories are crucial in explaining crime, and have received a great deal of empirical support, as meta-analyses by Pratt & Cullen (2000) and Pratt et al. (2010) have revealed. Results from supporting research have shown that social learning processes are integral to criminal conduct (Akers, 1998; Pratt et al, 2009; Cullen et al, 2006; Winfree & Bernat, 1998), and that low self-control is an important predictor of criminal behavior (Cullen et al., 2006). However, most studies (with few notable exceptions – see Marenin & Reisig, 1995) have been conducted on U.S. samples. To test the claims of LSC of being a general theory that explains all individual differences in the 'propensity' to refrain from or to engage in crime and deviance "at all ages, and under all circumstances" (Akers, 2000, p. 110; Gottfredson & Hirschi, 1990; Pratt & Cullen, 2000), testing across various geographical locations and cultures is essential. This study tests

bots theories in a different context (Post-Communist Eastern European country) to that which they have been developed for, while applying them to a deviant behavior to which they have not been previously applied. The study design (see Chapter 4) also allows for testing the effects of slight variations within this context (different historical/cultural regions of Romania). This will allow a between and within group comparison that will shed light on the importance of larger and smaller changes in context with respect to both SLT and LSC as they relate to the purchase of non-deceptive counterfeit goods.

The consumption of counterfeit goods in Romania

In addition to the contextual information presented above, a brief discussion of the consumption of counterfeit goods in Romania is in order, especially since in post-communist countries (such as Romania) the consumption of fake goods has been the norm for many years. After the fall of communism in 1989, counterfeit versions of virtually every product originating from Middle or Far East countries have flooded Romania (Pascu, 2009; Pascu, Milea, & Nedea, 2013). Accordingly, post-socialist Romania was characterized by the ease of access to counterfeit goods (such as fake branded clothing) whether in "open-air markets or well-established shops, in shop windows or 'under the counter' (Crăciun, 2010, para. 1). For almost two decades after 1990, countries like Bulgaria and Romania (but also other countries from the former 'Eastern Block' such as Poland, Czech Republic, Serbia and Russia) have been considered havens for bogus goods, acting both as significant markets but also as transit routes for counterfeit goods (smuggled from Ukraine, Serbia and the Republic of Moldova among others – Nagy, 2012) to enter Western Europe (DeKieffer, 2010, p. 168). The ubiquity (or at least the perceived pervasiveness) of counterfeit goods is well illustrated by results from a national study conducted by The National Institute for Opinion and Marketing Studies

(INSOMAR, 2005) where 38% of the respondents indicated that the risk of buying counterfeits

on the Romanian market is 'very high', while 46% considered those risks to be 'high enough' (p.

8). The flow of counterfeits into Romania is also evident in the statistics published by the

European Union Intellectual Property Office (EUIPO, 2016) through the Anti-Counterfeiting

Intelligence Support Tool (ACIST). According to these (see Figure 3.3), body care items are the

most prevalent[50] (12.83%), followed by clothing and accessories (10.61%), with electronics

lagging far behind (6.73%).

Figure 3.3. The ACIST report on categories of counterfeit goods detained at the Romanian border between 2008–2016[51]
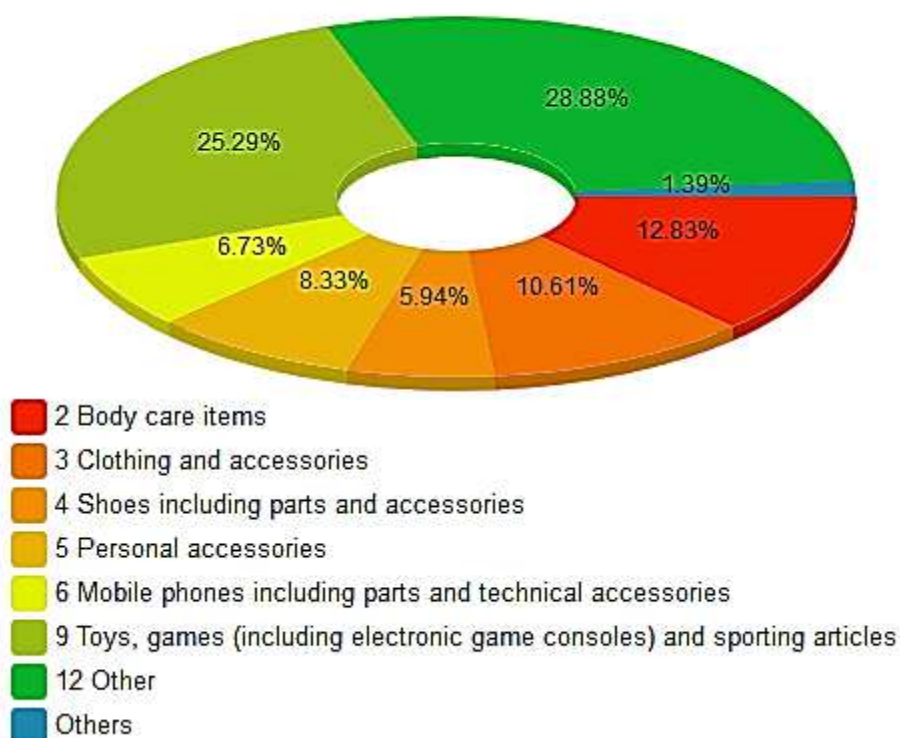
Due to its shortcomings in terms IPR legislation and enforcement Romania was still on the Watch List in the latest Special 301 Report (Froman, 2015), although significant improvements have been made since joining the EU in 2007 (DeKieffer, 2010). As visible in Figure 3.4[52], the amount of physical counterfeit goods and street piracy continued the declining trend of previous years in 2013 and 2014 (EUIPO, 2016; Froman, 2015), but Romania remains a country which is used by transnational organized crime groups as a smuggling route but also for production (e.g., counterfeit cigarettes – Europol & OHIM, 2015, p. 43).

Figure 3.4. The evolution of counterfeit goods detained at the Romanian border 2012–2014
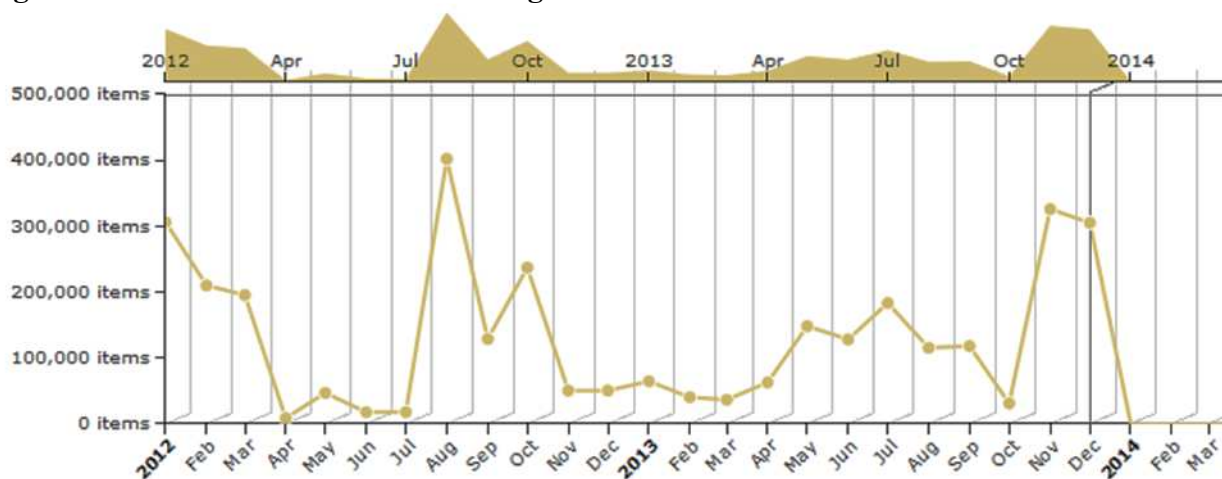
Furthermore, criminal proceedings in the case of physical goods (usually started as a result of rights holder actions) are slow (Vilau, 2013), and Internet piracy "especially peer-to-peer downloading, remains a serious concern" (Froman, 2015, p. 138).

---

[52] The figure might be misleading, as "0 items" is implausible. This is most likely due to a lack of reporting on behalf of the Romanian custom authorities, substantiated by the lack of data for 2015 and 2016.

Legislation, Anti-counterfeiting bodies, and research on consumption of counterfeit goods

Law no. 344/2005 defines goods infringing IPR as "counterfeited goods, the "pirate" goods, goods infringing the rights to a patent for invention or to a supplementary protection certificate (SPC), and goods infringing geographical indications (GIs) and plant variety (PV) rights (Dabija, Dinu, Tăchiciu, & Pop, 2014, p. 43). Besides law 344/2005, Romania's legal framework for the protection and enforcement of IPR includes several relatively recently enacted laws[53], in conjunction with the stipulations of the Criminal- and Civil Code (Vilau, 2013), but anti-counterfeiting bodies exist as early as 1924[54] (Dabija et al., 2014).

Current Romanian legislation prohibits the manufacturing and trade of IP infringing goods, but does not penalize the consumption of counterfeit goods. In addition, although Customs (which has recently started a more proactive role in enforcing IPR at the nations' borders – Vilau, 2013) may seize and destroy fakes, counterfeits that are meant for "non-commercial use, and whose value is insufficient to require payment of customs duties" constitute an exception (Vilau, 2013, p. 178). Presently two national agencies, The State Office for Inventions and Trademarks (OSIM) and the Romanian Copyright Office (ORDA), are the main agencies with IPR protection responsibilities, but they are supplemented by several other agencies (police, the prosecutor's departments and courts, etc.) with "specialized staff who co-ordinate anti-counterfeiting measures within and between them" (*Parliamentary Assembly, Working Papers: 2007 Ordinary Session, Second Part 16-20 April 2007*, 2008).

---

[53] Romanian laws in defense of intellectual property: the Law on Trademarks and Geographical Indications (84/1998), the Patent Law (64/1991), the Law on Designs and Models (129/1992), the Law on Copyright and Related Rights (8/1996), the Law on Unfair Competition (11/1991), the Government Ordinance on Enforcing IP Rights (100/2005), the EU IP Rights Enforcement Directive (2004/48/EC), the Law on Measures to Enforce IP Rights Within Customs Proceedings (344/2005) (Vilau, 2013, p. 177).

[54] The Association for Consumer Protection was set up in 1924, followed by the "Industrial Property Office (set up in 1932), the State Office for Inventions and Trademarks (set up in 1970 and reorganized in 1990), the Romanian Copyright Office (set up in 1996) and many others" (Dabija et al., 2014, p. 45).

While legislation and enforcement have been regularly targeted by various governmental evaluations (especially from the EU) the consumption of counterfeit goods in Romania has only been addressed by a handful of studies. Accordingly, results from Pascu et al. (2013) suggest that consumers perceive the (low) living standards (63%) and the legislation (17%) as being the main reason behind the counterfeiting in Romania. They also indicate as the main reason for purchasing the lower price of fake goods (Pascu et al., 2013). This is in line with Bloch et al. (1993) who indicated that consumers from countries with low purchasing power[55] are more inclined to purchase counterfeit goods.

More recently, Dabija et al. (2014) have investigated the behavior of Romanian consumers with regards to a range of products (food, clothing, toys, household and electrical appliances, mobile phones, computers and cosmetics) and have come to similar conclusions. According to their findings, price (but especially the ability to negotiate the final price) is an important determinant in purchasing decision of Romanian consumers irrespective of the category of fake goods (Dabija et al, 2014). However, their findings have also revealed that Romanians have a "fairly diversified behavior when purchasing counterfeit goods" (Dabija et al, 2014, p. 57):

> Respondents generally reject vehemently counterfeit food, clothes items and household
> and electronic appliances but accept to a certain degree the purchase of completely or
> partially fake toys, computers and mobile phones. (p. 57)

---

[55] A recent evaluation of the purchasing power of the various European citizens (GfK, 2013) indicated that the purchasing power of Romanians is among the lowest in the region (3.49 €, compared to top of the list Liechtenstein's 58.84 €).

Results (consistent with previous literature) have also revealed differences in purchasing behavior in terms of sex[56], age and education[57], and identified the inability of the respondents to distinguish between genuine and counterfeit goods as a significant issue (Dabija et al, 2014). Interestingly, results of a recent study on European consumers, commissioned by the Office for Harmonization in the Internal Market (OHIM), seem to conflict with findings about the influence of gender and education. According to the results, gender and educational levels do not seem to play a part in the voluntary purchase of counterfeit goods (Berland, 2013), European women and men having reported similar purchase habits regarding counterfeits, especially in the 15-24 age group, where "the proportion of men reporting having bought counterfeit products is aligned with that of women" (Berland, 2013, p. 10). Conversely, consistent with previous findings, age seems essential in determining opinions about counterfeiting, as well as a decisive factor when it comes to the consumption of counterfeit goods by European citizens (Berland, 2013, p. 47). For example, while 52% of EU citizens between 15 and 24 years old viewed buying counterfeits as "a smart purchase", acceptance of counterfeiting decreased consistently with age, the European average for all age groups standing at 34% (Berland, 2013, p. 12, 47).

Results of the same study also revealed characteristics of consumption by Romanians. These indicate that 75% of Romanians considered unacceptable to purchase counterfeit products even when the price for the authentic product is too high, as well as when the genuine product is not yet available in their region (Berland, 2013, p. 45-46), while only 36% considered buying fakes a "smart purchase" that enables them to own the items they want "while preserving … purchasing power" (Berland, 2013, p. 63).

---

[56] Males were found to be more likely to refrain from purchasing counterfeit food, mobile phones and computers; similar tendencies for women, but for clothing, cosmetics and mobile phones (Dabija et al., 2014, p 50).
[57] Higher level of education represents an inhibiting factor when it comes to counterfeit food, household appliances and computers (Dabija et al., 2014, p 51).

However, results also revealed glaring differences between the Member States: 13% of citizens from Member States, which joined the EU after 2004 (including Romania), reported purchasing counterfeit goods in 2013, versus 4% in the other Member States (Berland, 2013, p. 10), suggesting a possible cultural influence. Similar differences between member states were revealed by Swoboda et al.'s (2013) cross-country examination of antecedents of purchase intentions toward counterfeits and its impact on willingness to pay for the genuine item (p. 23) which tested a framework based on the Theory of Planned Behavior and Adoption Level Theory using data from China, Romania and Germany. Their findings revealed significant differences between countries, implying that culture (but also economic development) matters when it comes to purchasing counterfeit goods. The authors examined the effects of Hofstede's cultural dimensions on the antecedents[58] of purchase intention developed from Ajzen's (1991) Theory of Planned Behavior, and have identified uncertainty avoidance, collectivism and 'Confucian dynamism' as the dimensions relevant to the purchase intentions toward counterfeits (Swoboda, 2013, p. 25). These dimensions are relevant when it comes to subjective norms (the perception of general social pressure to demonstrate/not demonstrate the behavior), perceived behavioral control (the perceived ease of performing the behavior), integrity (lawful and moral beliefs) as well as perceived risk (among others). All these 'antecedents' (which bear resemblance to such SLT concepts as differential association, differential reinforcement and definitions) were found to be significant for Romania and Germany, except for China, where perceived behavioral control was found to have no significant impact on purchase intentions (Swoboda et al., 2013, p. 33). Together and separately, these findings support the idea that country specifics matter in terms of deviant behavior of consumers (Swoboda et al, 2013, p. 36).

---

[58] Novelty Seeking, Perceived Risk, Integrity, Fairness, Subjective Norm, Perceived Behavioral Control (Swoboda, 2013, p. 26).

Regional cultural and economic differences and their effects on counterfeit consumption

As discussed above, Swoboda et al. (2013) have shown, cultural dimensions (and culture in general) matter when it comes to consumption of counterfeit goods. Romanian culture can be classified as a collectivistic culture (David, 2015; Swoboda et al., 2013), with a high level of uncertainty avoidance and conformism (to existing norms), that values tradition (David, 2015). As shown by Swoboda et al. (2013) these could conceivably influence the consumption of counterfeit goods. Although David's (2015) study has not revealed fundamental differences between the 'old provinces' (i.e., historical regions) of the country that could have "practical/ecological" importance (p. 172), a plethora of literature (discussed above) has detailed the dissimilarities between regions in terms of culture, history, geography and economy, as well as the diversity in terms of ethnicities and religion. Accordingly, although the author of this study does not contest the existence of an overarching Romanian cultural tradition, of an 'integrated Romanian cultural profile' (David, 2015, p. 173), based on the reviewed literature, a variation in consumption of counterfeit goods is expected between respondents originating from different historical regions.

CHAPTER 4 : METHODS

This dissertation examines the ability of two competing criminological theories, Akers' SLT (1985, 1998) and Gottfredson and Hirschi's LSC (1990), to explain the purchase of counterfeit goods in a sample of Romanian college students. This chapter provides a detailed description of the sampling methodology used to develop the sample from BBU, the largest state university located in the city of Cluj-Napoca, as well as an overview of the analytic procedures employed to empirically assess the hypotheses derived from the two theories. In addition, a detailed overview of the measures for each construct of interest (along with control variables) is also provided in the following section.

Choice of research design

Both theories have generated a large body of empirical research assessing their core propositions (Pratt & Cullen, 2000; Pratt et al., 2010). Meta analyses of tests of SLT and LSC have revealed that SLT has been extensively tested on juveniles and college samples, while the majority of studies testing LSC used community samples of adults (Pratt and Cullen, 2000). Best practices seem to indicate that due to the "inherently dynamic" nature of SLT (Matsueda, 1988, p. 286) longitudinal designs may be better suited to examine this complex process. Accordingly, supporting research employed longitudinal designs (e.g., Akers et al., 1979; Akers & Lee, 1996; Warr & Stafford, 1991), but cross-sectional designs (e.g., Winfree & Bernat, 1998; Holt et al., 2010) were also successfully employed in testing core SLT propositions.

Conversely, the type of design suitable for testing LSC has been intensely debated (see Hirschi & Gottfredson 1993; Paternoster & Brame, 1998; Pratt & Cullen, 2000). Gottfredson and Hirschi (1990; 1993) have claimed that self-control (the dominant predictor of criminal behavior in LSC) is stable over time and argued in favor of testing SC theory using cross-

sectional designs. Although the debate is far from being settled, researchers have mainly

employed cross-sectional designs in their tests of SC (e.g., Winfree & Bernat, 1998; Holt et al.,

2012), although examples of studies using longitudinal designs to can also be found in the

literature (e.g., Turner & Piquero, 2002). Best practices of research testing SLT and LSC, as

well as the difficulties posed by sample selection, have guided the choice of a cross-sectional

design for this dissertation.

Data collection method

Due to the lack of data on the topic, data for the present study was obtained through an

original data collection effort. This was achieved via a cross-sectional survey design (as argued

above) applied to college students living in Cluj-Napoca. More precisely, a web-based self-

administered questionnaire (managed using the SurveyMonkey platform) was used to collect

data from undergraduate and graduate students enrolled at BBU for the 2015-2016 academic

year. The survey instrument consists of four different sections: (1) behaviors serving as the

dependent variables; (2) social learning variable scales; (3) the self-control scale; (4) control

variables and (other) demographic information. In addition, an informed consent form was

included at the beginning of the survey (see Appendix A), along with information on counterfeit

products, definitions of various concepts[59], as well as clear instructions for completion.

Sampling procedures

Selection considerations for the sample and the study site were discussed in detail in

Chapter 3. In addition to those discussed above, it is important to note that, in terms of the

consumers of counterfeit goods, previous research findings (e.g., Ledbury, 2007) suggest that

---

[59] What the researcher meant by: apparel; accessories; electronics; and volitional purchase (see Measures section for a more detailed description).

buyers of counterfeits are not restricted to a certain demographic, as consumption of such goods is "commonplace across a broader variety of age, gender and socio-economic status categories than often assumed" (Rutter & Bryce, 2008, p. 1146). This means that although students represent a narrow consumer base, a college sample is appropriate for studying counterfeit purchasing behavior. In addition, successful tests of SLT and LSC have also been performed on college samples (e.g., Holt et al., 2010; Gibbs & Giever, 1995), providing further support with regards to the possibility of using a sample of college students in rigorous tests of both theories. At this point it is important to note that findings from Peterson's (2001) meta-analysis suggest that responses of college students in social science research studies tend to be slightly more homogeneous than that of non-students. His findings also indicated that (at least in the analyzed studies) the effect sizes derived from student samples differed both in their direction and magnitude in comparison to those derived from non-college samples (Peterson, 2001). Accordingly, one must be cautious in the attempt to generalize findings from a college student sample to a nonstudent (adult) population (Peterson, 2001). The limitations of using a college sample are discussed in detail in Chapter 6 of this dissertation.

The sampling frame consists of the list of students enrolled at all the colleges at BBU for the 2015-2016 academic year. Having a sampling frame readily available facilitates the sampling procedure which entailed using a simple random sampling technique for sample selection (Groves et al., 2009; Singleton & Straits, 2009; Sudman, 2000). This sampling procedure is "almost always preferable, as it produces a true representative sample (Watt & van den Berg, 1995). The use of a truly random process (a computer program that generates random numbers, developed by the authorized information technology management structures at BBU

based on the detailed instructions of the researcher[60]) ensured that each entry on the student list

had the same probability of being chosen. The sampling process was administered by the same

BBU information technology management structure, the Center for Data Communications. This

was a condition posed by the university in order to grant access to the student population as it

ensures anonymity and the proper protection of personal data (Student names, PID numbers and

email addresses). The selection of the sample was performed in one stage with elements of the

sample selected independently (Sudman, 2000). The selection process began with the numbering

of each unit in the sampling frame, followed by the use of a random number generator to select

units to be included in the sample. The sampling process was one without replacement meaning

that if a random number was selected in multiple instances, only the first instance was taken into

consideration and all the subsequent instances were discarded (Sudman, 2000). The sampling

procedures described above yielded a sample of 3810 students. This number was determined

based on series of considerations presented below.

Sample size

Best practices in social science research point to the fact that what constitutes and

adequate sample size for a particular study that uses simple random sampling depends on series

of factors. First of all, the type of the study influences the required sample size, as explanatory

studies require a larger sample than exploratory studies (Singleton & Straits, 2009; Sudman,

2000). In addition, knowledge on the target population also bears influence in deciding on

sample size. Given that the population of interest is known, finite and relatively small (N =

---

[60] In order to ensure proper sampling procedures, the researcher drafted detailed instructions on how to draw the simple random sample from the student population, communicated them in writing to the authorized ITM structure managers, and inspected all the steps throughout implementation.

37830[61]) a smaller sample size (than for a national study for example) is required (Sudman, 2000).

Sample size also depends on how many subgroups will be studied. Previous research on product counterfeiting suggests that both the targets and the purchasing patterns differ depending on the gender of the buyer (although the impact of gender may differ from country to country – Lee & Yoo, 2009), while the purchase of counterfeits also varies across income and education (Cheung and Prendergast, 2006; Lee & Yoo, 2009; Wee et al., 1995). Accordingly, the subgroups of interest for the present study are male and female students, various income level groups within the studied student population, but also undergraduates and graduates. In such cases, Sudman (2000) suggests as a general rule that the sample size should be large enough to have "100 or more units in each category for the major breakdowns and a minimum of 20-50 in the minor breakdowns" (p.157). Although this study uses simple random sampling procedures, it is highly unlikely that the resulting sample will be all male or all female, but there is a (albeit small) chance that the sample might not contain enough graduate students. Due to the limitations of the study locale, specifically the lack of clear policies/procedures as well as assigned personnel for sampling and other research related issues at BBU, rather than setting some sort of a quota ensuring the presence of the minimum amount of units in the subgroups of interest suggested by Sudman. (2000), the solution offered by Groves et al. (2009) was deemed more tenable. Groves et al (2009) suggest that a good way of establishing sample size is by ensuring that "the confidence limits obtained from the subsequent sample will not exceed some value" (p.104). In addition, it is also important to balance the costs of gathering data and the value of increased information resulting from an increased sample size, as a "small study well-designed and executed is superior to a large study that has been messed up" (Sudman, 2000, p 149).

---

[61] Data supplied by the BBU Data Communications Center.

Accordingly, the sample size for the current study is calculated based on the following formula (Daniel, 2012; Israel, 1992):

$$n = (CL)^2 * Sd * (1-SD)/(Me)^2$$

Where n_0 = *required sample size; CL = confidence level; Sd = Standard deviation while Me = the margin of error.* For the present study, the chosen confidence level is 95% (Z score =1.96), while the margin of error (confidence interval) is of +/- 5%. Regarding standard deviation, .50 is a 'safe' decision that ensures that the sample will be large enough (Daniel, 2012). Thus, solving for n_0 gives us:

$n_0 = (1.96)^2 *.5(.5)/(.05)^2$

$n_0 = (3.8416 *2.5)/.0025$

$n_0 = .9604/.0025$

$n_0 = 384.16$

This calculation is valid in the case of an unknown population. Since the population of BBU students is known, finite and relatively small, the size of the sample (n_0=385) needs to be adjusted accordingly in the sense that it can be reduced slightly (Israel, 1992). This can be done due to the fact that "a given sample size provides proportionately more information for a small population than for a large population" (Israel, 1992, p. 4). The formula for adjusting the sample size in the case of known populations is provided by Israel (1992):

$$n_1 = n_0/\{1+[(n_0-1)/N]\}$$

Where n_1 is the size of the necessary sample size in the case of a finite population, while N is the size of the population. Solving for n_1 gives us:

$n_1 = 385/\{1+[(385-1)/37830]\}$

$n_1 = 385/[1+(384/37830)]$

$n_1 = 385/1+0.0101$

$n_1 = 385/1.0101$

$n_1 = 381$

A more simplified formula[62] which takes into account the level of desired precision (Israel, 1992) gives a similar result:

$$n_1 = N/(1+Ne^2)$$

Solving for n_1 based on this formula yields:

$n_1 = 37830/(1+37830*0.05^2)$

$n_1 = 37830/(1+37830*0.0025)$

$n_1 = 37830/(1+94.57)$

$n_1 = 37830/95.57$

$n_1 = 396$[63]

According to these calculations the final sample had to consist at least of 381 students.

However, this would have been assuming a 100% response rate, while (as discussed above) web surveys response rates tend to be generally low (Skarupova, 2014), even though this might not

---

[62] Where n_1 is the size of the necessary sample size for a finite population, N is the size of the population, while e is the level of desired precision.

[63] This is almost the same number (viz., 397) as published tables suggest for a population of 50,000 for a ±5 precision level "where the confidence level is 95% and p=.5" (Israel, 1992, p. 3).

necessarily be true for college populations (Shih & Fan, 2009). Nevertheless, some scholars

suggest using oversampling to ensure that this minimum sample size is achieved (Barlett,

Kotrlik, & Higgins, 2001).

Bartlett et al. (2001) suggest four methods for determining anticipated response rates

required for the calculation of the oversampling: (1) taking the sample in two steps, and using the

results of the first step to estimate how many additional responses may be expected from the

second step; (2) employing a pilot study and using its results to estimate response rate for the full

study; (3) using responses rates from previous studies of the same or a similar population; or (4)

estimate the response rate (p. 46). Since financial and time constraints won't allow for the use of

the first two strategies, while estimating response rates is "not an exact science" (Barlett et al.,

2001, p. 47), the third strategy seems more feasible. Data on response rates from similar

population in the Eastern European region is scarce, although a recent study (that used both

online and mail surveys, but no incentives) on alumni job market placement from 48 Romanian

universities (including BBU) reported a response rate of 19.34% (representing 9294 from 48098

alumni contacted by all participating universities) (APM, 2011). As the respondents to these

post-graduation surveys do not constitute a college student sample per se, this information could

only be used as an indication of the expected response rate. However, information obtained from

the BBU Data Communications Center and ITM structures with regards to a 2015 university-

wide survey indicated a response rate of around 10%. Due to the fact that the information came

from the university structure that is in charge of web based survey administration, this was

deemed a more reliable basis for the calculation of the necessary sample size adjusted for

expected response rate than the aforementioned nation-wide study. Accordingly, the following

formula was used to calculate the necessary sample size (Israel, 1992):

$$n_2 = n_1 / r$$

Where n_2 is the size of the necessary sample size adjusted for expected response rate, n_1 is the size of the necessary sample for a finite population, while r is the expected response rate. Solving for n_2 gives us:

$n_2 = 381/.10$

$n_2 = 3810$

This meant that at least 3810 BBU students had to be sampled in order to achieve the necessary 381 responses.

Measures

In order to collect data on the variables of interest, students were required to self-report the amount of counterfeit purchase they have made in the past year, alongside responses to measures of constructs from the two competing theories to be examined (SLT and LSC). Since the present study applies criminological theories to a deviant behavior that has only recently come into the attention of criminologists, there is a scarcity of readily available measurements that could be employed. While the Grasmick et al. (1993) scale could be utilized "as is" for measuring LSC concepts (Delisi et al., 2003; Pratt & Cullen, 2000), measurements for social learning concepts were not readily available. Therefore, existing SLT measurements had to be adapted to fit the topic at hand. In constructing the adapted measures, best practices in social science survey research suggest as the first step in developing valid measures the examination of the literature for determining how other scholars have used and measured the concepts to be studied (Bachman & Schutt, 2011; Bohrnstedt, 2000, p. 99). Accordingly, a review of the literature on SLT (and LSC) and product counterfeiting was conducted. Based on this review, a

series of measures were developed, pretested, and revised prior to application to the study sample.

Most of the measures developed or adapted for this dissertation are four-point Likert scales[64]. These were chosen to facilitate comparison of results with previous studies (especially in the case of the Grasmick et al. scale), but also to minimize the likelihood of "fence-sitters" to choose neutral answers in an effort to give socially desirable answers (Bachman & Schutt, 2011, p. 151). These measures are described in detail in the following section.

Dependent variables

The dependent variable of interest is the volitional consumption of non-deceptive counterfeit goods. Due to the limitations of human recollection, and in accordance with best practices in social science research employing self-reported surveys (Bradburn, Sudman, & Wansink, 2004; Singleton & Straits, 2009), the study focuses on *the purchase of counterfeit goods during the past 12 months[65] with respect to three product categories: apparel (including accessories), perfumes, and electronics.* In addition, in an attempt to provide a more accurate measurement of this behavior, assessment was intended to be accomplished in two ways.

The first method makes use of a series of ordinal measures, while the second method records purchases as a continuous variable with respondents asked to indicate the number of counterfeit products they have purchased in the past 12 months separately for each category of products. The number of purchased products for each category would have been summed before analyses were carried out. This was not an option due to the nature of the collected data, but this will be discussed in detail in Chapter 5.

---

[64] Where 1 = strongly agree, 2 = agree; 3 = disagree; 4 = strongly disagree.
[65] Although it could be argued that purchasing a counterfeit item can be a "low-salience event" for some and a "high-salience event" for others, generally a year is recommended as appropriate recall period (Bradburn, Sudman, & Wansink, 2004; Singleton & Straits, 2009, p. 292), for reducing recall related issues such as telescoping (Groves et al., 2009).

Conversely, the five-point ordinal measures – akin to that developed by Burruss et al. (2013) –, asked students to indicate whether they have knowingly purchased (1) counterfeit apparel (including accessories), (2) perfumes, or (3) electronics within the past 12 months. The answers to these scales (where 1= never; 2= 1 to 2 times; 3= 3 to 5 times; 4= 6 to 9 times; 5= 10 or more times.) were used to determine (a) whether respondents have engaged in such behavior in the past 12 months, and (b) how many times they have engaged in said behavior. Subsequent to establishing that they have engaged in counterfeit purchasing behavior, determining the point of acquisition was also judged to be important, as the nature of the purchase location reveals the level of risk a consumer is willing to take when acquiring a product. Consequently, using a similar ordinal scale, respondents were required to indicate how many times in the past 12 months they have knowingly purchased a counterfeit item from: 1) a legitimate brick and mortar vendor (either boutique or mall); 2) a market (i.e., vendors in an organized and authorized setting); 3) a flea market; 4) a street vendor (i.e., a street merchant that is either mobile or stationary, with authorization[66], but not within an organized setting); 5) and from an individual. The assumption behind this measure was that purchasing from a legitimate brick and mortar represents the lowest risk (as the buyer has the option of seeking reparation), while purchases made from individuals have the highest risk (as there is little chance of obtaining restitution).

In addition, the effort put forth in seeking out these types of goods was assessed via an identical five-point ordinal scale that required students to indicate how many times in the past 12 months they have purposefully traveled with the specific intent to purchase at least one counterfeit item (from the three categories examined in this study) to: 1) sale outlets located

---

[66] Authorized sellers are easily recognized as they have an authorization number, and (in accordance with G.O. 28/1999 regarding the obligation of economic operators; G.O 99/2000; H.G. 333/2003 approving the Methodological Norms for the application of Government Ordinance 99/2000 on the marketing of products and services, and Law 650/2002) an electronic cash register.

within the limits of the city of Cluj-Napoca; 2) sale outlets located outside the limits of the city of Cluj-Napoca, but within the limits of Cluj county; 3) sale outlets located outside the limits of Cluj county, but within the neighboring counties of Sălaj, Bihor, Alba, Mureş, Bistriţa-Năsăud, Maramureş[67]; 4) sale outlets located within the borders of Romania (other than the 7 previously named counties); 5) sale outlets located outside the Romanian borders, but within the borders of the neighboring countries of Hungary, Ukraine, the Republic of Moldova, Bulgaria, and Serbia[68]. The assumption behind this measure was that the further away the location of the purchase, the more effort is put forth by the buyer in procuring the counterfeit item. Finally, the frequency of purchase within the same time period was also assessed using a five-point ordinal scale. The responses to these four scales would have been summed, with a higher score on the resulting scale denoting a more avid purchaser of counterfeit goods.

Regrettably, due to the nature of the collected data (large amount of missing data on the variables composing the scale measuring counterfeit purchase that were not suitable to be dealt with by employing multiple imputation techniques) coerced a reevaluation of the means of measuring the dependent variable of interest. Accordingly, since only the five-point scales measuring the amount of counterfeits knowingly purchased within the past 12 months (1= never; 5= 10 or more times) yielded usable data, the other measures (i.e. (measures meant to assess the level of risk respondents are willing to take, the effort they have put forth in acquiring fakes, and the frequency of their purchases) were discarded. These issues are discussed in more detail in Chapter 5.

---

[67] Neighboring county is defined as a county that shares a common (administrative) border with Cluj County.
[68] Neighboring country is defined as a country that shares a common (administrative) border with Romania. Out of the five countries that fit this definition, only two are members of the European Union (Hungary and Bulgaria), Serbia is an official candidate for membership in the European Union currently negotiating its EU accession, while the other two (Republic of Moldova and Ukraine) are non-EU countries.

Table 4.1. Dependent variables

Concept/Variable	Measures
Volitional purchase of counterfeit goods within the past 12 months.	Please indicate the approximate amount of counterfeit apparel (including accessories) that you have knowingly purchased in the past 12 months.
	Please indicate the approximate amount of counterfeit perfume you have knowingly purchased in the past 12 months.
	Please indicate the approximate amount of counterfeit electronics you have knowingly purchased in the past 12 months.
	Reported as a round number.
Volitional purchase of counterfeit goods within the past 12 months (ordinal).	Please indicate how many times you have knowingly purchased counterfeit (including accessories) in the past 12 months.
	Please indicate how many times you have knowingly purchased counterfeit perfume in the past 12 months.
	Please indicate how many times you have knowingly purchased counterfeit electronics in the past 12 months.
	1 = Never; 2 = 1 to 2 times; 3 = 3 to 5 times; 4 = 6 to 9 times;
	5 = 10 or more times.
Level of risk indicated by the location of volitional purchase of counterfeit goods within the past 12 months.	Please indicate how many times you have knowingly purchased counterfeit goods from the three categories (apparel, including accessories; perfumes; electronics) from the following locations:
	1) a legitimate brick and mortar vendor (either boutique or mall);
	2) a market (i.e., vendors in an organized and authorized setting);
	3) a flea market;
	4) a street vendor (i.e., a street merchant that is either mobile or stationary, with authorization , but not within an organized setting);
	5) an individual
	1 = Never; 2 = 1 to 2 times; 3 = 3 to 5 times; 4 = 6 to 9 times;
	5 = 10 or more times.
Effort put forth in seeking out counterfeit goods.	Please indicate how many times in the past 12 months they have purposefully traveled with the specific intent to purchase at least one counterfeit item (from the three categories examined in this study) to:
	1) sale outlets located within the limits of Cluj-Napoca;
	2) sale outlets located outside the limits of the city of Cluj-Napoca, but within the limits of Cluj county;

Table 4.1. (cont'd)

Effort put forth in seeking out counterfeit goods.	3) sale outlets located outside the limits of Cluj county, but within the neighboring counties of Sălaj, Bihor, Alba, Mureș, Bistrița-Năsăud, Maramureș;
	4) sale outlets located within the borders of Romania (other than the 7 previously named counties);
	5) sale outlets located outside the Romanian borders, but within the borders of the neighboring countries of Hungary, Ukraine, the Republic of Moldova, Bulgaria, and Serbia.
	1 = Never; 2 = 1 to 2 times; 3 = 3 to 5 times; 4 = 6 to 9 times;
	5 = 10 or more times.
Frequency of volitional purchase of counterfeit goods within the past 12 months.	Please indicate how frequently you have knowingly purchased counterfeit (including accessories) in the past 12 months.
	Please indicate how frequently you have knowingly purchased counterfeit perfume in the past 12 months.
	Please indicate how frequently you have knowingly purchased counterfeit electronics in the past 12 months.
	1 = Once/month; 2 = Twice/month; 3 = 3 to 5 times/month;
	4 = 6 to 9 times/month; 5 = 10 or more times/month.

Independent variables

      LSC and SLT constructs of interest were measured using measures previously validated

through rigorous empirical tests of the two competing theories; either as such (e.g. the Grasmick

et al. scale), or adapted to the topic at hand. Accordingly, low self-control was assessed using

the Grasmick et al. (1993) scale[69], while SLT concepts (*deviant peer association, definitions –*

positive and neutralizing –; imitation; differential reinforcement – approval and punishment),as

well as other concepts relevant to counterfeit purchase were measured using adapted measures

from various previous studies such as Holt, Bossler and May (2012), Huang et al. (2004),

Sharma and Chan (2011).

---

[69] "…the most widely used measure of self-control" (Delisi, Hochstetler, & Murphy, 2003, p. 242).

Social learning measures. Social learning measures include a series of items meant to measure the *differential association* construct by asking students to report on a five point scale[70] how many of their of their (1) peers and (2) family members have: (a) engaged in counterfeit purchasing behavior; (b) used/worn counterfeit products; (c) expressed a positive attitude towards counterfeit products within the past 12 months. Accordingly, *deviant peer association* was calculated by summing the scores of these 6 items, each having an equal weight in the final measure. Higher scores on this scale indicate a higher degree of deviant peer association. It is important to note that these measures were reevaluated based on the results of the scale reliability and principal component analyses, which will be discussed later in this chapter.

Another SLT component, *definitions favorable to the specific deviant behavior of interest* was measured by enquiring students about the extent to which they consider that purchasing counterfeit goods is wrong. On a four-point scale (where 1 = strongly agree, and 4 = strongly disagree) students had to indicate the extent to which they agreed with the following statements: 1) Purchasing counterfeit goods is wrong; 2) Purchasing counterfeit goods harms other individuals; 3) Purchasing counterfeit goods harms rightful IP owners; 4) Purchasing counterfeit goods is damaging to society in general; 5) The purchasing of counterfeit goods should be criminalized. These items were reverse coded so that higher scores on these items mean greater positive definitions. Each of the 5 items have been given equal weight in the measure, and the scores for these items have been summed in order to construct a scale that measures the *positive definitions* component of SLT.

As discussed previously (see Chapter 2), individuals may learn positive definitions that define the behavior as completely acceptable (as being 'smart' or 'savvy' shoppers – see Tom et al., 1998; Penz & Stöttinger, 2005). Alternatively, the learned neutralizing definitions may lead

---

[70] 1 = none; 2 = very few; 3 = about half; 4 = more than half; 5 = all of them (based on Holt, Bossler, & May, 2012).

individuals to rationalize that (despite legal prohibition/societal disproval) counterfeits are not harmful to anyone. Accordingly, *neutralizing definitions* have also been measured. This was performed through adapting a previously tested measures developed by Holt et al. (2010) to the topic of counterfeit purchase. Therefore, on a four point scale (where 1 = strongly agree while 4 = strongly disagree) respondents were asked to indicate the extent to which they agreed with the following statements: 1) People who buy counterfeit goods are actually helping the local economy; 2) If counterfeit items are harmful (to society, to the economy; IP owners and other individuals) then it is the responsibility of the authorities to get them off the market; 3) Unfair practices by manufacturers force people to buy cheaper alternatives to their overpriced original products; 4) Those who say that purchasing counterfeit goods is wrong are just envious of our ability to be savvy shoppers; 5) I see nothing wrong in buying counterfeit goods as a means of fitting in with my friends. These scales have been reverse coded in order make the items more consistent and going in a more intuitive direction. Accordingly, higher scores on these items mean higher neutralizing definitions. Scores for these 5 items were summed, with each item having equal weight in the measure, which resulted in a scale to measure *neutralizing definitions*.

Due to its conceptual and empirical overlap with *differential association*, measures of *imitation* are often omitted in test of SLT (Akers & Lee, 1996; Burruss et al., 2013; Pratt et al., 2010). However, in the case of counterfeit purchasing behavior *imitation* may have a significant bearing. Therefore, this component was measured by asking respondents about the influence of peers and family (or other more distal influences) on their own purchasing behavior. In order to be consistent in measurement, students were asked to rate on a four-point scale (where 1 = strongly agree and 4 = strongly disagree) whether they 1) Have been influenced to purchase counterfeit goods by the behavior of their parent(s) purchasing such products; 2) Have been

influenced to purchase counterfeit goods by their friend's/peers' behavior of purchasing such

products; 3) Have been influenced to purchase counterfeit goods by the behavior of purchasing

such products of people they admire; 4) Have been influenced to purchase counterfeit goods by

others' (i.e., strangers) behavior of purchasing such products; 5) Have been influenced to

purchase counterfeit goods by the behavior of purchasing such products portrayed in the media.

Items composing this scale were reverse coded in order to be consistent and have them going in a

more intuitive direction. Then, scores for these items (each with equal weight in the measure)

were summed, resulting in a scale measuring *imitation*. Accordingly, higher scores on these

scales indicate higher levels of peer/family/distal influence.

Finally, gauging student's perception of the approval of purchasing counterfeit goods by

their peers and family, as well as their perception of the 'punishment' associated with the

voluntary consumption of counterfeit goods measures the *differential reinforcement* component

of SLT. Students were asked to report the approval of friends and family on a scale of one-to-

four (where 1 = strongly agree and 4 = strongly disagree), as well as their (perceived) likelihood

of being chastised by their family or friends for purchasing fake goods. The scale measuring the

approval of peers/family was reverse coded so that higher score indicated higher peer/family

approval. Conversely, higher scores on punishment scales indicated higher levels of punishment.

Each of the items had an equal weight in the creation of the scales measuring *differential

reinforcement approval/ differential reinforcement punishment* for which scores for the

constituting items were summed. In addition to the above narrative, a detailed overview of these

scales is presented in Table 4.2.

Low self-control. While some measures for assessing SLT concepts had to be adapted to

the purchasing of counterfeit goods, measures of low self-control were readily available in the

form of the well-tested, but also criticized (as discussed below) 24-item scale developed by Grasmick et al. (1993). In order to better compare the results with prior studies on crime in general, the scale employed in this study respects the original scale construction. Consisting of twenty-four items, divided uniformly into 'impulsivity', 'simple tasks', 'risk seeking', 'physical activities', 'self-centered', and 'temper' sub-components (Grasmick et al., 1993), the scale asks respondents to report whether they 1 = strongly agree, 2 = agree, 3 = disagree or 4 = strongly disagree with each individual item (see Table 4.2). Responses for the 24 items were summed resulting in a single scale with scores ranging from 24 to 96. Higher scores on the scale indicate higher levels of self-control, while lower scores signify lower levels of self-control (Arneklev, Grasmick, Tittle, & Bursik, 1993; Burruss, et al., 2013; Grasmick et al., 1993; Holt et al., 2012).

It is important to note that a few scholars have found biased items in the Grasmick et al. scale, in the sense that they function differently for males and females (Gibson, Ward, Wright, Beaver, & Delisi, 2010; Higgins, 2007). Accordingly, findings from Higgins's (2007) Rasch rating scale model analysis called into question the construct validity of the scale, as did the findings by Gibson et al. (2010). However, Gibson and his colleagues (2010) have also found that their altered scale had comparable effects on criminal behavior as the full scale. Both Higgins (2007) and Gibson et al. (2010) have called for revisions to the original Grasmick et al. scale, but it currently remains the most widely used measure of self-control (Burruss et al., 2013; Delisi et al., 2003). In addition, Holt et al. (2012) have recently successfully used the full scale in their study on low self-control, deviant peer associations and cyberdeviance, their analyses aimed at measuring scale reliability (Cronbach's alpha = .87) indicating a good reliability of the original Grasmick et al. scale (p. 385). In addition, as the scale was applied to counterfeit

product purchase for the first time, it was deemed more appropriate to use the more established

original Grasmick et al. (1993) scale for the present study rather than the revised versions.

Table 4.2. Constructs and measures: Independent variables

Social Learning Theory		
Concept	**Variable**	**Measures**
Differential association	Deviant peer association	How many of your peers have engaged in counterfeit purchasing behavior in the past 12 months?
		How many of your family members have engaged in counterfeit purchasing behavior in the past 12 months?
		0 = none; 1 = very few; 2 = about half; 3 = more than half; 4 = all of them.
Definitions	Positive definitions (defining a criminal behavior as desirable)	Indicate the extent to which you agree with the following statements:
		1) Purchasing counterfeit goods is wrong;
		2) Purchasing counterfeit goods harms other individuals;
		3) Purchasing counterfeit goods harms rightful IP owners;
		4) Purchasing counterfeit goods is damaging to society in general;
		5) The purchasing of counterfeit goods should be criminalized.
		1 = strongly agree; 2 = agree; 3 = disagree; 4 = strongly disagree
	Neutralizing definitions	1) People who buy counterfeit goods are actually helping the local economy;
		2) If counterfeit items are harmful (to society, to the economy; IP owners and other individuals) then it is the responsibility of the authorities to get them off the market;
		3) Unfair practices by manufacturers force people to buy cheaper alternatives to their overpriced original products;
		4) Those who say that purchasing counterfeit goods is wrong are just envious of our ability to be savvy shoppers;

Table 4.2. (cont'd)

Definitions	Neutralizing definitions	5) I see nothing wrong in buying counterfeit goods as a means of fitting in with my friends. *1 = strongly agree; 2 = agree; 3 = disagree; 4 = strongly disagree*
Imitation	Peer/family/distal influence on purchasing behavior	1) I have been influenced to purchase counterfeit goods by the behavior of my parent(s) purchasing such products; 2) I have been influenced to purchase counterfeit goods by my friend's/peers' behavior of purchasing such products; 3) I have been influenced to purchase counterfeit goods by the behavior of purchasing such products of people I admire; 4) I have been influenced to purchase counterfeit goods by others' (i.e., strangers) behavior of purchasing such products; 5) I have been influenced to purchase counterfeit goods by the behavior of purchasing such products portrayed in the media. *1 = strongly agree; 2 = agree; 3 = disagree; 4 = strongly disagree*
Differential reinforcement	Perceived friend/family approval	1) Most of my family members consider that it is OK for me to buy counterfeit products; 2) Most of my friends consider that it is OK for me to buy counterfeit products; *1 = strongly agree; 2 = agree; 3 = disagree; 4 = strongly disagree*
	Perceived friend/family punishment	1) Most of my family members reprimand me for buying counterfeit products; 2) Most of my family members make negative remarks about me using/wearing counterfeit products; 4) Most of my friends make negative remarks about me for buying counterfeit products; 4) Most of my friends make negative remarks about me using/wearing counterfeit products; *1 = strongly agree; 2 = agree; 3 = disagree; 4 = strongly disagree*

Table 4.2. (cont'd)

Self-Control Theory		
Concept	**Variable**	**Measures**
Self-control	Impulsiveness	1) I often act on the spur of the moment without stopping to think.
		2) I often do whatever brings me pleasure here and now, even at the cost of some distant goal.
		3) I'm more concerned with what happens to me in the short run than in the long run.
		4) I don't devote much thought and effort to preparing for the future.
		1 = strongly agree; 2 = agree; 3 = disagree; 4 = strongly disagree
	Simple tasks	1) I frequently try to avoid projects that I know will be difficult.
		2) I dislike really hard tasks that stretch my ability to the limit.
		3) When things get complicated, I tend to quit or withdraw.
		4) The things in life that are easiest to do bring me the most pleasure.
		1 = strongly agree; 2 = agree; 3 = disagree; 4 = strongly disagree
	Risk seeking	1) I like to test myself every now and then by doing something a little risky.
		2) Sometimes I will take a risk just for the fun of it.
		3) I sometimes find it exciting to do things for which I might get into trouble.
		4) Excitement and adventure are more important to me than security.
		1 = strongly agree; 2 = agree; 3 = disagree; 4 = strongly disagree
	Physical activity	1) If I had a choice, I would almost always rather do something physical than something mental.
		2) I almost always feel better when I am on the move than when I am sitting and thinking.
		3) I like to get out and do things more than I like to read or contemplate ideas.

Table 4.2. (cont'd)

Self-control	Physical activity	4) I seem to have more energy and a greater need for activity than most other people my age.
	Self-centeredness	1) If things I do upset people, it's their problem, not mine.
		2) I try to look out for myself first, even if it means making things difficult for other people.
		3) I will try to get things I want even when I know it's causing problems for other people.
		4) I'm not very sympathetic to other people when they are having problems.
		1 = strongly agree; 2 = agree; 3 = disagree; 4 = strongly disagree
	Temper	1) I lose my temper easily.
		2) Often, when I am angry at people I feel more like hurting them then talking to them about why I am angry.
		3) When I am really angry, other people better stay away from me.
		4) When I have a serious disagreement with someone, it's usually hard for me to talk calmly about it without getting upset.
		1 = strongly agree; 2 = agree; 3 = disagree; 4 = strongly disagree

Control variables

Based on the literature on the consumption of counterfeit goods, as well as previous tests

of SLT and LSC, a series of control variables were selected to be included in the study (for an

overview see Table 4.3). These include demographic variables – *gender* (Ang et al., 2001;

Cheung and Prendergast, 2006), *ethnicity*, *age* (Cheung and Prendergast, 2006; U.S. Chamber of

Commerce, 2007), *level of education*[71] (Cheung and Prendergast, 2006; Dabija et al., 2014; Lee

& Yoo, 2009; Wee et al., 1995), *disposable income* (Cheung and Prendergast, 2006; Lee & Yoo,

---

[71] Specialization was also recorded for the purposes of sample description and comparison of the study sample to the target population.

2009; Wee et al., 1995) –, but also *attitudes toward counterfeits* (de Matos et al., 2007) and *counterfeiting* (Sharma & Chan, 2011), *opportunity*, and a *control for social desirability*. Gender was measured as a dichotomous variable (coded as 0 = male, 1 = female); ethnicity (coded as 1 = Romanian; 2 = Hungarian; 3 = Rroma; 4 = Other), and level of education (recorded as 1 = undergraduate; 2 = graduate) were measured as categorical variables; while age (although a large variation is not expected due to the nature of the sample) was recorded as a continuous variable. Disposable income was assessed by asking respondents to estimate the amount of income they have available per month to spend on items that do not represent the usual necessities (such as food, lodging, educational and other vital expenses), and place themselves in one of the following brackets: 1 = less than 100 RON; 2 = between 101 and 300 RON; 3 = between 301 and 500 RON; 4 = over 501 RON.

As discussed previously, opportunity (to commit crime or engage in deviant behavior) is a significant component of LSC (Gottfredson and Hirschi, 1990; Grasmick et al. 1993), although, according to the proponents of the theory, low self-control is the main causal factor, an examination of the role of opportunity is essential as low self-control in conjunction with crime opportunity leads to criminal behavior. In addition, while opportunity is not a major causal factor in SLT, it most likely plays a role in the purchase of counterfeit good, since despite definitions providing the mind-set which makes the individual more willing to buy the opportunity to engage in such behavior also has to be present (Akers, 2000). Accordingly, opportunity to engage in counterfeit purchase was assessed by asking students to report the (total) number of locations they know about where they can easily purchase counterfeit products within the ascribed region (their city, county; neighboring counties; Romania and neighboring countries).

In addition, attitudes towards counterfeit goods and counterfeiting in general were also measured. Building on the strengths of previous measures meant to assess general consumer attitudes (such as attitude toward advertising) Huang et al. (2004) have developed measures for assessing consumers' attitude toward gray market goods in general. Later, their scale has also been successfully employed in assessing consumer attitude towards counterfeits (see de Matos, Ituassu, & Rossi, 2007; Phau, Sequeira, & Dix, 2009). The present study makes use of an adapted version (de Matos et al., 2007) for measuring students' attitude towards counterfeit goods. Consequently, students were asked to indicate on a four-point scale (where 1 = strongly agree and 4 = strongly disagree) whether they agree or disagree with the following statements: 1) Generally speaking, buying counterfeit goods is a better choice than buying genuine products; 2) Considering price, I prefer counterfeit goods; 3) I like shopping for counterfeit goods; 4) Buying counterfeit goods generally benefits the consumer; 5) There's nothing wrong with purchasing counterfeit goods. Items were reverse coded before combining these scales by summing the scores for the constituting items (each with an equal weight). This resulted in an *attitude towards counterfeit goods (ATCG)* scale on which higher scores denote a more positive attitude toward counterfeit goods.

Similarly, the attitude towards counterfeiting was measured using a four-point scale (where 1 = strongly agree and 4 = strongly disagree) developed and tested by Sharma and Chan (2011). This questionnaire item required respondents to indicate the degree to which they agree or disagree with the following set of statements: (1) Buying counterfeit products is unethical; (2) People buy counterfeit products because of high prices for genuine brands; (3) Buying counterfeit products is a smarter way to own well-known brands; (4) Buying a counterfeit product is morally wrong; (5) The legal consequence of buying counterfeit products is minimal;

(6) Counterfeit products offer good value for money. Items two, three, five and six were reverse coded in order to have the scale items running in the same direction, before summing the scores of the constituting items (each having an equal weight). This resulted in an *attitude towards product counterfeiting (ATC)* scale, on which higher scores indicate a more positive attitude towards product counterfeiting.

Furthermore, although the mode of the survey administration reduces the level of social desirability bias (Dillman, 2007; Groves et al., 2009;), a measure that allows to control for social desirability was included due to the potentially embarrassing nature of the topic. Accordingly, a four-point scale (where 1 = strongly agree and 4 = strongly disagree) asked respondents whether they (1) are embarrassed when they purchase counterfeit products, (2) would be embarrassed if their peers would find out that they have purchased counterfeit products, and whether they would be (3) would be embarrassed if their family would find out that they have purchased counterfeit products. These items were reverse coded and summed, resulting in a scale that indicates the level of social desirability of the respondent, with higher scores denoting higher levels of social desirability. It is important to note at this point that the decision not to use previously tested social desirability scales such as the Marlowe-Crowne Social Desirability Scale (M-C SDS) (Crowne & Marlowe, 1967), or its short version (but still 20 items) developed by Strahan and Gerbasi (1972), was based on the fact that the length of the questionnaire was already considerable, and including an additional 20 items would have increased the likelihood of "breakoff, hurried answers given without consideration…all of which are undesirable" (Rossi et al., 2000, p. 223).

Finally, as discussed in Chapter 3, due to the circumstances of the study locale, cultural differences could not be assessed through the use of two samples from two different

historical/cultural regions of Romania. Accordingly, other means of assessing (subtle) cultural

differences, and their influence on the ability of SLT and LSC to explain counterfeit purchase

had to be included in the study. Since the BBU student body is diverse in terms of regional

cultural heritage (see Figure 4.1) an alternative measurement of these cultural differences was

possible by using a proxy measure. Accordingly, respondents were asked to indicate the locality

(city, town) and the county[72] where they have completed their high school studies in order to

record the geographic/historical/cultural region to which they belong.

Figure 4.1. The geographical distribution of Babeș-Bolyai students enrolled in their first year (for the 2015-2016 academic year) based on student domicile[73]

---
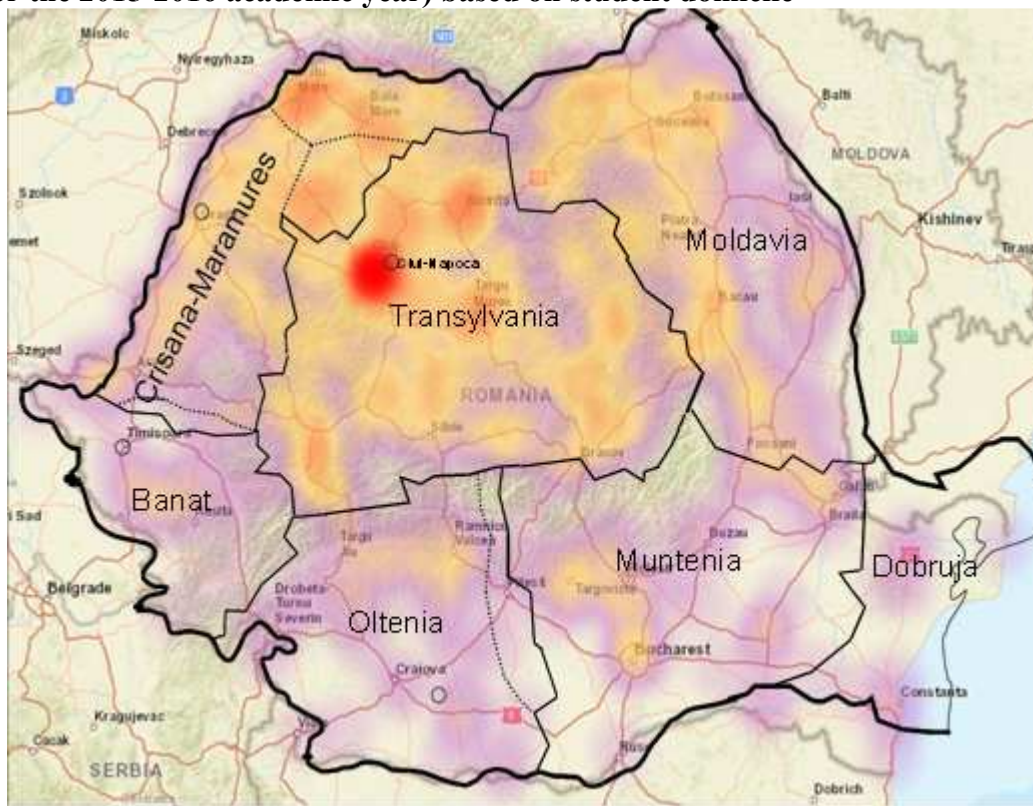
[72] Since there are multiple cities with the same name across different historical/geographical regions of Romania, indicating the county eliminates error in identifying the correct region. These items were re-coded to indicate the historical/cultural regions of interest for this study based on the observed data (1=Transylvania; 2= Moldavia; 3= Wallachia; 4=Moldova Republic; 5=Hungary).

[73]For a better understanding of the geographical distribution of Babeș-Bolyai students, the schematic map depicting geographical boundaries of historical/cultural regions (Jordan, 2005) was overlaid on top of the student distribution map (REI, 2016).

Table 4.3. Control variables

| Concept/Variable	Measures
Gender	0 = Male; 1 = Female.
Ethnicity	1 = Romanian; 2 = Hungarian; 3 = Rroma; 4 = Other
Level of education	1 = undergraduate; 2 = graduate.
Age	Reported as a round number.
Disposable income	1 = Less than 100 RON; 2 = Between 101 and 300 RON; 3 = Between 301 and 500 RON; 4 = Over 501 RON.
Opportunity	Report the total number of locations you know about where you can easily purchase counterfeit products located in: 1) The city of Cluj-Napoca; 2) Cluj county; 3) Counties neighboring Cluj county (Sălaj, Bihor, Alba, Mureș, Bistrița-Năsăud, Maramureș); 4) Other counties in Romania; and 5) Countries neighboring Romania (Hungary, Ukraine, Republic of Moldova, Bulgaria, Serbia).[74]
Attitudes towards counterfeits	1) Generally speaking, buying counterfeit goods is a better choice than buying genuine products; 2) Considering price, I prefer counterfeit goods; 3) I like shopping for counterfeit goods; 4) Buying counterfeit goods generally benefits the consumer; 5) There's nothing wrong with purchasing counterfeit goods. *1 = strongly agree; 2 = agree; 3 = disagree; 4 = strongly disagree.*
Attitudes towards counterfeiting	1) Buying counterfeit products is unethical; 2) People buy counterfeit products because of high prices for genuine brands; 3) Buying counterfeit products is a smarter way to own well-known brands; 4) Buying a counterfeit product is morally wrong; 5) The legal consequence of buying counterfeit products is minimal;

---

[74] These were re-coded into one numerical indicator of the total of known counterfeit purchase locations.

Table 4.3. (cont'd)

Attitudes towards counterfeiting	6) Counterfeit products offer good value for money. *1 = strongly agree; 2 = agree; 3 = disagree; 4 = strongly disagree.*
Control for social desirability	1) I am embarrassed when I purchase counterfeit products; 2) I would be embarrassed if my peers would find out that I have purchased counterfeit products; 3) I would be embarrassed if my family would find out that I have purchased counterfeit products. *1 = strongly agree; 2 = agree; 3 = disagree; 4 = strongly disagree.*
Cultural influence	Locality of high school completion; County of high school completion

Survey implementation

The survey instrument employed in this study was created by building on previously tested measures used in criminological studies testing tenets of SLT and LSC, as well as in studies on the demand side of product counterfeiting. Due to the novelty of the topic addressed by this dissertation, very few measures were readily available. Accordingly, while the Grasmick et al. (1993) scale, which has a long history of utilization in criminological research, and it is recognized as an established and validated measure of self-control (Delisi et al., 2003; Pratt & Cullen, 2000), could be employed without alterations, measurements for social learning concepts had to be adapted to the topic of counterfeit purchase. In addition, previously tested measurements were available for certain control variables (e.g., attitude toward counterfeits and counterfeiting), but some variables of interest had to be measured using newly developed scales. These have implications for the reliability and validity of these measures.

Best practices in social science research recommend a pretest of the survey instrument before application to the study sample (Bachman & Schutt, 2011; Groves et al, 2009; Sheatsley,

2000). Correspondingly, the questionnaire was distributed via an online group to a small number

of BBU master students enrolled at the College of Political, Administrative and Communication

Sciences[75]. Although this was not a probability sample (but samples for pretest need not be –

Bohrnstedt, 2000) it can be considered a "sample of persons similar to those with whom one

intends to use" (Bohrnstedt, 2000, p. 100). The data collected from this group (n=15) was used

evaluate construct validity (via exploratory factor analyses – EFA), and scale reliability

(calculating Cronbach's alpha was used to evaluate internal consistency). However, sample size

requirements for meaningful analyses were not attainable due to time and resource constraints.

Consequently, results from the analyses [76] could be used merely as an indication of the

performance of the newly created/adapted scales and scale reliability and validity was re-

assessed after data collection was completed. These are discussed in more detail in Chapter 5.

Therefore, instead of relying solely on these indications to improve the questionnaire

items, the pretest was coupled with expert reviews from a panel of three academic scholars from

Michigan State University and BBU. These reviewers were asked to evaluate the wording and

structure of questions, the response alternatives, the instructions for completion (Groves et al.,

2009; Sheatsley, 2000), as well as the face validity of the scales. Based on the results from the

analyses and feedback from the reviewers, some scale items were revised (these are presented in

Table 4.2 and Table 4.3) before application to the study sample.

Following the finalization of the survey instrument, the researcher drafted an email to be

distributed to the study sample by the BBU ITM structures. The email contained the request for

participation in the study, alongside a description of the objectives of study, an indication of the

---

[75] This college includes four departments: Political Science, Public Administration, Communication and Public
relations, and Journalism. The pretest group included students from all four departments.
[76] Cronbach alpha values ranged between .58 and .92. While for some scales more than one factor was revealed by
the EFA, the Eigen values for the first factor were quite a bit larger than the Eigen value for the next factor.

voluntary nature of the study participation, contact information of the study coordinator as well as the link to the online survey, and it was distributed using a BBU email address created specifically for the purposes of this study. During March 2016, weekly waves of request for participation were sent to the study sample (totaling 3812 emails), throughout which period responses on the online platform were carefully monitored. Data collection ceased before the minimum required sample size was achieved due to the blacklisting of the BBU domain by Yahoo, and the lack of clear procedures at the ITM structures on how to handle such situations. Therefore, the data collection effort generated 623 respondents, but only 612 had recorded responses, while only 351 were marked as 'complete' by SurveyMonkey and yielded usable data. These 'complete' questionnaires still contained missing values as the questionnaire was designed in line with best practices in social science research in terms of the protection of human subjects. Namely, as stated in the Research Participant Information and Consent Form inserted at the beginning of the online questionnaire (see Appendix A), respondents had the option of skipping questions that they felt uncomfortable with, as well as the possibility to withdraw from the study altogether at any point during survey completion. Missing values – except when they are Missing Completely at Random (MCAR) – may produce biased results and therefore they were assessed using missing value analysis. These and other relevant statistical analyses are discussed in detail in Chapter 5.

CHAPTER 5 : DATA ANALYSIS AND RESULTS

As discussed previously, the study aims to examine the influence that (1) peer interactions (differential association; imitation), (2) individual 'definitions' of counterfeiting, and (3) differential peer reinforcement of the behavior have on the purchase of counterfeit goods. It also aims to examine the (4) effects of an individual's level of self-control on the purchase of counterfeit goods and (5) assess the role of opportunity in counterfeit purchase.

Before different descriptive statistics (frequencies, percentages, and means) could be employed to describe the characteristics of the respondents, a series of issues caused by the nature of survey data had to be addressed. Accordingly, – subsequent to the exploration and assessment of the data – missing value analyses, multiple imputation, and (where required) data-normalizing transformations had to be carried out. Based on the results of the preliminary examination of the data, the analysis plan had to be adjusted to the constraints of the data: (1) the nature and the strength of the relationship between the dependent variable, and the independent and control variables were examined using parametric and non-parametric tests; (2) due to the necessity for the dichotomization of the dependent variable (discussed in more length in the following section) Logistic regression models (rather than Ordinary Least Squares regression) were estimated.

Although most of the of the measures used in this study yielded ordinal level data, these are suitable for use in multiple regression analyses (Pallant, 2010; Tabachnick & Fidell, 2013) meant to assess the relationship between SLT concepts and counterfeit purchase, as well as the relationship between low self-control and counterfeit purchase. Accordingly, self-control, social learning, and control variables were entered into the equation in several statistical models.

Measures of model fit and multivariate assumptions were also assessed. These analyses and their respective results are discussed in detail in the present chapter.

Handling missing values.

<u>*Missing value analysis*</u>

Web surveys have a potential for high nonresponse rates, as the technical problems encountered by respondents in filling out online questionnaires add another source of nonresponse (Bethlehem & Biffignandi, 2011, p. 129). However, not only studies conducted in online environments suffer from missing data, but it "plagues almost all surveys" (Scheffer, 2002, p. 153). "Virtually, all survey studies in the criminology literature suffer from nonresponse" (Brame, Turner, & Paternoster, 2010, p. 275), being "one of the most pervasive problems in data analysis" (Tabachnick & Fidell, 2013, p. 62). The present study constitutes no exception, as data collected through the online survey contained a fair amount of missing values.

The "most typical response to missing data problems within criminology is to delete missing observations from the analysis" (Brame & Paternoster, 2003, p. 74), which often is "the default missing data handling options in statistical software packages" (Enders, 2010, p. 55). Deleting incomplete cases "probably is not a major problem in studies where the proportion of cases with missing data are small" (Brame & Paternoster, 2003, p. 74), however, methods that involve removing the incomplete cases "require an MCAR mechanism and produce biased parameter estimates with MAR and MNAR data[77]" (Enders, 2010, p. 55). Therefore, establishing the nature of missingness is essential.

Since in this process "the pattern of missing data is more important than the amount missing" (Tabachnick & Fidell, 2013, p. 62), in order to examine the nature of missingness and its potential effects on subsequent statistical analyses, missing value analysis (MVA) to describe

---

[77] MCAR = missing completely at random; MAR = missing at random; MNAR = missing not at random.

the pattern of missing data was conducted using the Statistical Package for the Social Sciences (SPSS 19) software package. This procedure (described in detail by Graham, 2012, but also Tabachnick & Fidell, 2013) identifies the location of the missing values in the dataset, establishes the extent of the missing values, determines whether pairs of variables tend to have values missing in multiple cases, and if they are missing randomly (IBM Knowledge Center; Hill, 1997; Graham, 2009; 2012). Before running the MVA, the accuracy of the data coding and entry into SPSS was verified for each variable. Upon confirming the integrity of the coding, and all of the data lied within the required parameters, the MVA analysis was conducted using SPSS. The results revealed no discernible patterns of incompleteness. In addition, the chi-square statistic for testing whether values are MCAR, known as Little's MCAR test,[78] (Enders, 2010; Little, 1988; Tabachnick & Fidell, 2013) was not statistically significant (Chi-Square = 10332.614, df = 10181, p = .144). These results suggest that the data are at least MAR – as missing data is very rarely MCAR (Rubin, 1976; Hosmer, Lemeshow, & Sturdivant, 2013) –, which yield unbiased parameter estimates (Graham, 2009). There is no way to test whether MAR holds in a specific data set, "except by obtaining follow-up data from nonrespondents" (Schafer & Graham, 2002, p. 152), however, this was not an option in the present study. Therefore, in such situations when missingness "is beyond the researcher's control…MAR is only an assumption" (Schafer & Graham, 2002, p. 152). Nevertheless, as Collins, Schafer, and Kam (2001) have recently indicated, an erroneous assumption of MAR may have only a minor

---

[78] Although not without issues (a propensity to produce Type II errors bringing about a false sense of security about the missing data mechanism) (Enders, 2010, p. 21), Little's MCAR test is widely employed for assessing the MCAR missing data mechanism. It is a global test that applies to the entire data set, which simultaneously evaluates mean differences across subgroups of cases that share the same missing data pattern (Enders, 2010, p. 19; McKnight, McKnight, Sidani, & Figueredo, 2007). If the data "deviate from the completely random process…then the chi-square test would be significant and the data analyst would conclude that the data are not MCAR" (McKnight et al. 2007, p. 94).

impact on estimates and standard errors. Thus, although the MAR nature of the data is an

assumption, it is a reasonable assumption to be made.

In terms of how to deal with missing data after establishing the nature of missingness,

although not all would agree with Tabachnick and Fidell's (2013) assessment that one has to

decide "among several bad alternatives" (p. 63), the decision is indeed important for the outcome

of the subsequent analyses. Due to the fact that the sample size (N=351) is below the calculated

minimum (viz., 381), and because it is "wasteful to drop observations that are only missing

values on a handful of variables" (Sainani, 2015, p. 991), efforts were made to 'rescue'

observations. Accordingly, multiple options were explored.

"Traditional approaches" (Scheffer, 2002, p. 153), also called "zero-order methods"

(Anderson, Basilevsky & Hum, 2000, p. 450) such as case deletion and mean imputation have

been extensively criticized (see Enders, 2010). These methods may be valid only under MCAR,

but even then, they may be inefficient (Schafer & Graham, 2002, p. 154.). On the other hand,

other techniques such as multiple imputation (MI), expectation maximization (EM) imputation,

and regression imputation are all valid options (Brame et al., 2010; Tabachnick & Fidell, 2013).

These techniques perform well, provided the percentage of missing data is not too great

(Scheffer, 2002, p. 153) and the missingness mechanism is not NMAR[79], as there are "few if any

procedures" which "can completely rectify the situation without error" when data is not missing

at random (McKnight et al., 2007, p. 121).

However, the optimal approach depends not only on the missingness mechanism, but

rather it differs depending on whether the study is cross-sectional or longitudinal, observational

or randomized, the missing values are in outcome or predictor variables, the affected variables

---

[79] According to Little and Rubin (2002) only missing data that are MCAR and MAR are ignorable, for likelihood-based imputation methods, NMAR data are not.

are of primary or secondary importance to the analysis, and whether the number of missing

values is small or large (Sainani, 2015, p. 991). For observational studies it is "prudent to

exclude observations that have zero data on either the primary predictor or the primary outcome

variable" (Sainani, 2015, p. 991), of they are missing almost all data points. Accordingly, cases

that contained no data (the respondent opened the questionnaire, but did not answer any

questions), and those that had no data on the primary predictor variables, were excluded from

further analyses. In addition, some authors suggest dropping variables with substantial missing

data (e.g., missing for >10% of the sample) that are of secondary importance to the analysis

(Sainani, 2015, p. 991; Tabachnick & Fidell, 2013, p. 71). Accordingly, variables that contained

large percent of missing values and that are not central to the study were excluded from further

analyses. Some of these variables however could be used as descriptive variables for a more

comprehensive description of consumers of counterfeit goods within the study sample. For a list

of excluded variables based on the amount of missing data, see Table A. 1 in Appendix B.

Multiple imputation

Both maximum likelihood estimation and multiple imputation (MI) are robust missing

data handling procedures that yield unbiased parameter estimates with MAR data (Enders, 2010,

p. 13). The present study makes use of the MI method to impute missing values using the

application procedures suggested by Enders (2010), not only because it is "…currently

considered the most respectable method of dealing with missing data" (Tabachnick & Fidell,

2013, p. 72), but also because it is "now accepted as the best general method to deal with

incomplete data in many fields" (Buuren, 2012, p. 25), MI "has been shown to be superior to

listwise deletion and other traditional methods in almost all circumstances" (Manly & Wells,

2015, p. 399). In addition to its extensive use across various scientific fields, this method also

offers multiple advantages over other methods. MI is an "adjustable crecent wrench" which despite rarely being the perfect instrument for a specific problem, "it works well for a wide variety of problems" (Brownstone & Valletta, 2001, p. 140), but most importantly, it does not require "MCAR (and perhaps not even MAR) and can be used for any form of GLM analysis, such as regression, ANOVA, and logistic regression" (Tabachnick & Fidell, 2013, p. 72). At this point it is important to note that, similarly to other statistical procedures that could be employed, MI also has drawbacks and limitations, but the reasons listed above are compelling enough to warrant the use of the MI procedure in the context of the present analysis.

In terms of the nature of the data, while normality violations may not pose a serious threat to the accuracy of multiple imputation parameter estimates, some suggest using normalizing transformation at the imputation phase (see Enders, 2010, p. 259). However, due to strong concerns about how "back-transforming the scores to the original metric can potentially affect the accuracy of the imputations and the resulting parameter values" (Enders, 2010, p. 260), MI was performed on untransformed variables.

The MI procedure can be succinctly and linearly described as "imputing values, conducting analyses with the complete case data, aggregating he results from each analysis, and analyzing the aggregated results" (McKnight et al., 2007, p. 199), thus allowing the uncertainty regarding the imputation to be taken into account (Horton & Lipsitz, 2001, p. 244). Although this description makes it seem straightforward, the MI procedure implies multiple steps in order to estimate missing data. Tabachnick and Fidell (2013) briefly describe the process for the case of a dichotomous dependent variable (for a more comprehensive description see Buuren, 2012), as employing logistic regression, then determining which variables will be used as predictors in the logistic regression, the process ultimately providing "an equation for estimating the missing

values" (Tabachnick & Fidell, 2013, p. 69). According to Tabachnick and Fidell (2013), these steps are followed by the identification of the distribution of the variable with missing data, through the process of selecting a random sample (with replacement) from the complete cases. Once this step is completed, from the distribution of the variable with missing data several (m) random samples are taken using the same procedure, which is then used to provide estimates of the variable in question for each and every of the m newly created complete data sets (Tabachnick & Fidell, 2013, p. 69).

In most situations five such samples will be sufficient, (although the amount of samples required can be as few as three – Rubin, 1996; Tabachnick & Fidell, 2013), since, unless unusually high rates of information are missing, there "tends to be little or no practical benefit to using more than five to ten imputations" (Schafer, 1999, p. 7). Although Schafer (1999) indicated that even "with 50% missing information, an estimate based on $m = 5$ imputations has a SD that is only about 5% wider than one based on $m = \infty$" (p.7), more recent developments suggest a much higher number when using SPSS (at least 20 – Graham, 2012, p. 117; 25 – Comulada, 2015, p. 4). Accordingly, the MI procedure was performed using both the minimum suggested number of imputations (5 and 20), but no significant differences were observed. Therefore, in order to minimize the likelihood of calculation error (due to the computational limitations of SPSS results had to be manually aggregated), the amount suggested by Rubin (1996), Schafer (1999), and Tabachnick and Fidell (2013) were consistently utilized in this study.

When performed using SPSS, the MI procedure consists of three distinct phases: the imputation phase, the analysis phase, and the pooling phase (Enders, 2010, p. 159). Within these three broad phases, several distinct steps have to be completed. Following Graham's (2012)

detailed step-by-step instructions, the imputation was performed by making use of all the

explanatory and outcome variables intended to be used in subsequent statistical analyses which

were selected based on the literature on the topic of this dissertation (Enders, 2010, p. 201-202;

Waal, Pannekoek, & Scholtus, 2011), but adhering to Graham's (2012) recommendations of

keeping the model small (limiting the number of variables to 15-20 variables).

The procedure (performed using the regression method) excluded from imputation

variables that contained too many missing values[80]. Values were imputed based on the observed

minimum and maximum values in the study sample for each variable that required imputation.

All subsequently presented data are based on pooled results originating from the imputed dataset

(Tabachnich & Fidell, 2013), and these are:

> …the mean for each parameter estimate over the analyses of multiple data sets as well as
>
> the total variance estimate, which includes variance within imputations and between
>
> imputations—a measure of the true uncertainty in the data set caused by missing data. (p.
>
> 69)

In accordance with recommendations by Tabachnick and Fidell (2013), analyses carried out on

the imputed dataset were repeated using only complete cases, because one can be more confident

in the results if these results "are similar" (p. 71) between them. Accordingly, both sets of results

will be presented and discussed. Furthermore, Graham (2012) indicated that, due to the lack of

an MI diagnostics tool in SPSS versions 17-20 (p. 117), there is "no way of knowing if the few

decisions available … have indeed produced proper multiple imputations" (p.112). Therefore, in

order to further validate the results based on imputed data, the final models were re-estimated

---

[80] Although "deletion of a variable with a lot of missing data is also acceptable as long as that variable is not critical to the analysis" (Tabachnick & Fidell, 2013, p. 71), there are no rules of thumb on what constitutes a "lot of missing data" (Tabachnick & Fidell, 2013, p. 71), nor "firm guidelines for how much missing data can be tolerated for a sample of a given size" (Tabachnick & Fidell, 2013, p. 63). Various sources indicate either 5% or 10% (Enders, 2010; Pallant, 2010; Tabachnick & Fidell, 2013); therefore, variables with missing values over 10% were excluded from the analysis.

using pairwise comparisons and bootstrapping. As these issues are relevant, but not central to the study, a more detailed discussion is included in Appendix D.

Scale reliability and validity

The construction of the scales measuring social-learning, low self-control and other relevant concepts has been described in detail in Chapter 4. Since scales measuring SLT concepts and attitudes towards counterfeits and counterfeiting were either adapted or newly created, reliability and validity were assessed using both pilot and study data. While the (mixed) results from the pilot data were useful in developing the final scales, these were based on a very small sample (n=15), while a minimum of five participants per variable is recommended for undertaking factor analysis (Munro, 2005). Therefore, only the results of the reliability and validity analyses performed on study sample are discussed in the following section. It is important to note that these analyses were performed on untransformed data, and that alpha values tend to be higher when data is normally distributed than when it is positively or negatively skewed.

<u>Social learning scales</u>

The *deviant peer association* scale had an excellent reliability (α =.927)[81], while the Eigen value for the first factor (4.408) was quite a bit larger than the Eigen value for the next factor (.77) and accounted for 73.48% of the total variance, which seems to suggest that the scale items are unidimensional. Although, due to the nature of the sample, it is reasonable to argue that most respondents are likely most heavily influenced by the behavior of their immediate peer groups (individuals who are the same age as they are), rather than that of their parents/families, both theories examined here impart a strong family influence on deviant behavior. Accordingly,

---

[81] Based on George and Mallery's (2010) rules of thumb which state that: "> .9 – Excellent, > .8 – Good, > .7 – Acceptable, > .6 – Questionable, > .5 – Poor, and < .5 – Unacceptable" (p. 231).

SLT argues that deviant behavior is learned mainly in intimate/primary groups via a process of symbolic interaction with deviant others with whom one is in differential association (Akers, 2000; Sutherland & Cressey, 1955, p. 77), and that the most important groups (in terms of development of definitions, models to imitate and as sources of differential reinforcement) are the primary ones (family, friends); while more remote groups/sources of attitudes and models (neighbors, schools, mass media, etc.) have varying degrees of effects on the individual's propensity to engage in criminal behavior (Akers, 1998). Consequently, both peers and family play an important role in deviant behavior.

Conversely, Gottfredson (2006) has recently argued that, for control theory (and implicitly LSC) delinquency of friends reflects selection effects (birds of a feather flock together) and measurement error (evidence of friends' delinquency comes from, and cannot be distinguished from, self-delinquency, as the accuracy of self-reports about peer behavior are questionable). In addition, as suggested by findings from Matsueda and Anderson (1998), delinquent behavior exerts an effect on delinquent peer association that is larger than the effect of delinquent peers on delinquency (p. 299). At the same time, LSC contends that parenting effects are essential in the development of self-control, and that parental supervision (which is potentially not the case for college students) limits the opportunities to engage in deviant (or analogous) behavior even while self-control does not change substantially.

Therefore, while the meaning of peer effects is interpreted very differently by the two theories (Gottfredson, 2006), both theories seem to suggest a strong parental influence on behavior (albeit in different ways). Accordingly, while it seems reasonable that the sample age group is likely to be more influenced by individuals in their proximal age group rather than by their parents, family influence should also be examined though the regression model, but

examining their individual influence would be informative. Correspondingly, the *deviant peer association scale* was computed by including the three scales measuring peer behavior which resulted in a scale with similar reliability (α =.925), while the *deviant family association scale* was computed by including the three scales measuring family behavior which resulted in a scale with excellent reliability (α =.912). It is important to note that deleting the scale item referring to attitudes expressed by peers and family with regards to counterfeits would have led to an increase in scale reliability (α =.958 and α =.951 respectively), suggesting that actual behavior (purchasing and wearing/using) might be different than verbal expression of favorable attitude. Nevertheless, principal component analysis (PCA) results indicated for both scales a one factor solution with an eigenvalue over one (2.615 and 2.558), accounting for 87.17% and 85.25% of the total variance, suggesting that the scale items are unidimensional.

In comparison, the *definition favorable to counterfeit purchase* scale had a lower Cronbach's alpha value (α =.78), but still within acceptable range. Although removing the item with regards to the purchase being punishable by law would have only marginally increased the alpha value (.785), the inter-item correlation matrix results revealed that two items had very low correlations: counterfeit purchase harms IP owner (.340) and counterfeit purchase should be punished by law (.403). This suggests that these two items might be tapping into a different concept[82]. Although one factor was retained with an eigenvalue of 2.724, which accounted for 54.4% of the total variance, suggesting that the scale items are unidimensional, the results of the reliability analysis prompted the reexamination of the scale. Accordingly, the *definition favorable to counterfeit purchase* was re-computed by using the three items that had inter-item correlations scores over 5: (1) Purchasing counterfeit goods is wrong; (2) Purchasing counterfeit

---

[82] Potentially there is difference between the moral versus legal realms, and the fact that buying counterfeit goods is not illegal in Romania may be affecting responses.

goods harms other individuals; (3) Purchasing counterfeit goods is damaging to society in general. This resulted in a scale with a similar Cronbach's alpha value (α =.784), while the PCA also indicated a one factor solution (eigenvalue = 2.097), which accounted for 69.92% of the total variation. Accordingly, since the more parsimonious measure produced similar results, the three-item *definition favorable to counterfeit purchase* scale was retained for further analyses.

In addition to positive definitions (as argued in Chapter 2) *neutralizing definitions* were also measured using Likert scales. This scale had an "unacceptable" (George & Mallery, 2010, p. 231) reliability (α =.478), and in addition, the inter-item correlation matrix revealed that two scale items were negatively correlated (-.058), while two others had correlations below .3. If the items were measuring the same underlying characteristic/concept all values should be positive (Pallant, 2010). Since the presence of negative values could indicate that some of the items may not have been correctly reverse coded (Pallant, 2010, p. 100), these were carefully verified. Overall, the scale did not perform well, and an acceptable level for Cronbach's alpha could not be reached even if the negatively correlated item would have been deleted (α =.568). Furthermore, PCA results revealed two factors with eigenvalues over one (1.840 and 1.190), which explained similar amounts of the total variance (36.8% and 23.8% respectively). Removing the offending items and computing the *neutralizing definitions* scale using the two remaining items that measure the deflecting of blame by turning counterfeit purchase into a positive behavior for the "right reasons" (helping local economy and fitting in with peers), resulted in a scale with an improved (albeit still poor) reliability (α =.535). In addition, PCA results of the reduced scale revealed one factor with eigenvalue over one (1.360) which explained 68.35% of the total variance. It is important to note at this point that, although this scale has a poor reliability score, individual items that make up the neutralizing definitions scale

are unfit to be used alone as measures of neutralizing definitions. McIver and Carmines (1981) effectively argued that "it is very unlikely that a single item can fully represent a complex theoretical concept or any specific attribute for that matter" and not only "tend to be less valid, less accurate, and less reliable than their muitiitem equivalents", but also "their degree of validity, accuracy, and reliability is often unknowable (p.15). Accordingly, the reduced *neutralizing definitions* scale was retained for further analysis.

Another SLT component, *imitation*, was measured using similar scales. This scale exhibits a good reliability (α =.874), while PCA results indicated one factor with an eigenvalue over 1 (3.375) which explained 67.5% of the total variance. Nevertheless, inter-item correlation matrix results indicated that two items with low correlations (influence of strangers: .508; influence of mass-media: .441), results which led to the recalculation of the imitation scale. The reduced imitation scale performed well (α =.815), PCA results indicating one factor with an eigenvalue over 1 (2.211) which explained 73.71% of the total variance. Accordingly, the reduced *imitation* scale was retained for further analyses.

Differential reinforcement, or "the balance between past, present, and future rewards and punishments, increases the probability of future deviant behavior" (Akers & Jensen, 2006; Akers & Lee, 1996; Pratt et al., 2009; Holt et al, 2012, p. 381) was measured using two sets of scales measuring the *approval* of peers and family, and the *perceived punishment* associated with the voluntary consumption of counterfeit goods respectively. Taken separately, the scale measuring the approval of peers/family had a good reliability (α =.807), with one factor with an eigenvalue of 1.677 explaining 83.89% of the total variance, while the scale measuring *punishment* had an excellent reliability score (α =.911) with one factor (eigenvalue = 3.166) explaining 79% of the

total variance. The combined scale measuring *differential reinforcement*[83] also performed well (α =.833), and, as expected, the PCA results indicated two factors with eigenvalues over 1. However, the scree discontinuity test revealed a two- factor solution with the largest drop between the second (eigenvalue = 2.616) and the third factor (eigenvalue = .595), indicating two underlying factors. Accordingly, the *differential reinforcement* scale could not be employed. In addition, since the items that make up the differential reinforcement/approval measure seem to tap into the same construct as the differential association measures employed in this study (this posing a potential measurement error issue), the conceptually distinct differential reinforcement/ punishment scale was retained for further analyses.

Self-control scales

The twenty-four item Grasmick et al. (1993) scale was applied to counterfeit product purchase for the first time. Although it is recognized as an established and validated measure of self-control (Delisi et al., 2003; Pratt & Cullen, 2000), this scale was also evaluated in terms of reliability and validity using sample data for two reasons: (1) application to a new crime type for the first time; (2) scales that are reliable with some groups (e.g. adults with an English-speaking background), may be "totally unreliable when used with other groups (e.g. children from non-English-speaking backgrounds)" (Pallant, 2010, p. 6). The results of these analyses revealed that the scale had a good reliability (α =.857). In addition, while (similarly to previous research, e.g. Holt et al. 2012) the principle components analysis indicated six factors with eigenvalues over one, the scree discontinuity test, revealed a one-factor solution with the most significant drop between the first (eigenvalue = 5.754) and second factor (eigenvalue = 2.664), indicating one underlying factor.

---

[83] Calculated as the difference between differential reinforcement/approval and differential reinforcement/punishment.

The ATCG scale was developed based on works by Huang et al. (2004), and Matos et al. (2007), who have previously reported good reliability for the scale (α =.85 and over .76 respectively). Reliability analyses performed using data collected for this dissertation also suggest a good reliability of the scale (α =.780). In addition, principal component analysis results revealed one factor with eigenvalue over 1 (2.744) explaining 54.89% of the total variance. These results suggested that the scale was unidimensional and consistent.

The other attitude scale included in this study was Sharma and Chan's (2011) ATC scale aimed at measuring respondent's attitude towards counterfeiting. In contrast to the ATCG scale, the ATC scale had a low reliability (α =.476). In addition, the inter-item correlation matrix revealed that three scale items were negatively correlated (-.136 and -.156), and four of them had correlations below .3. Furthermore, principal component analysis results revealed three factors with eigenvalues over 1, suggesting that the scale was not unidimensional. Therefore, the offending items were removed and the reduced ATC scale was reanalyzed. Based on the results of the reliability and principal component analysis the reduced ATC scale was computed using two items: (1) Buying counterfeit products is unethical (2) Buying a counterfeit product is morally wrong[84]. This resulted in a scale with good reliability (α =.883), with one factor (eigenvalue = 1.791) accounting for 89.56% of the total variance. However, the reduced ATC scale raises potential multicollinearity/measurement error issues as it is seemingly tapping into the same concept as *neutralizing definitions*. This is due to the fact that, in the context of SLT, the concept of definitions refers to attitudes and meanings that one attaches to a given behavior which are developed through imitation and differential reinforcement. Therefore, it can be argued that attitudes towards the crime of counterfeiting are part of the positive or neutralizing

---

[84] Both items were reverse coded as described in Chapter 4.

definitions of individuals. Furthermore, attitudes towards counterfeiting (at least as measured by the reduced ATC scale) defines crime as permissible (as not unethical, and not morally wrong), thus it can be reasoned that it is conceptually equivalent to neutralizing definitions. This was evaluated using multicollinearity diagnostics, which will be discussed later in this chapter.

Finally, the social desirability scale had a good reliability ($\alpha =.776$) with one factor (eigenvalue = 2.084) accounting for 69% of the total variance. It is important to note that Cronbach's alpha would have increased considerably ($\alpha =.846$) by deleting the scale item measuring shame of family members, possibly suggesting that (similarly to those discussed above regarding deviant peer association) these are two different intimate groups that might be worth treating separately.

In conclusion, the results presented above mean that overall, the scales performed well. It can be argued that all the essential components of SLT, as well as LSC and the majority of the controls that this study set out to measure were suitably measured, and can therefore be included in the analysis.

Descriptive statistics.

<u>*Sample characteristics*</u>

The final sample totaled 348 cases [85]after the deletion of cases with a large amount of missing data, and of the cases identified as multivariate outliers [86] (the process of deletion was described in detail above), resulting in a response rate of little over 9%. The resulting sample approximates the BBU student population reasonably well as indicated by the results of the chi-square goodness of fit tests.[87] Accordingly, as visible in Figure 5.1, the BBU student population[88] (N=37830) composed of 64% female and 36% male students enrolled in undergraduate (71%) and graduate (29%) programs, has an age range from 18 to 73, and a mean age of 24. Comparably, the sample (n=348) has a mean age of 23.59, a range between 18 and 72, and it is composed of 71.2% females and 28.8% males, with 77.7% of them enrolled in undergraduate and 22.1% enrolled in graduate programs.

---

[85] This sample size was achieved after imputing missing data as described earlier in this chapter.

[86] A total of 264 cases had to be deleted due to large amounts of missing data; while a further 3 cases were deleted following the identification of multivariate outliers (see discussion on multivariate outliers in the present chapter).

[87] Although the chi-square goodness of fit test indicated a statistically significant difference in terms of gender composition, ($\chi2 = 7.953$; $p = .039$), in terms of level of studies, the difference between the sample and the population was not statistically significant ($\chi2 = .237$; $p = .625$).

[88]BBU statistics originate from the BBU Data Communications Center.

Figure 5.1. Study population and study sample characteristics
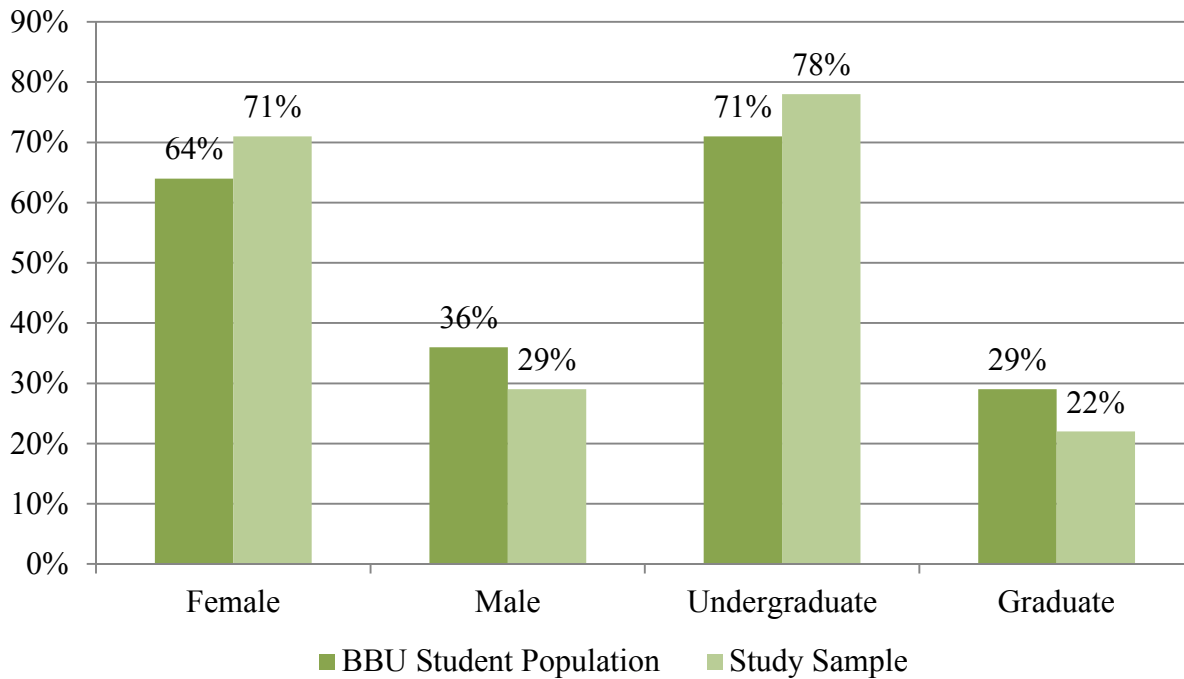
In terms of disposable income of the respondents, the modal category was 2 (between 101 and 300 RON, which corresponds approximately to 25 and 75 USD[89]). Among respondents, 61% reported that within the past 12 months they have not knowingly purchased counterfeit apparel (including accessories), 78% reported not purchasing counterfeit perfumes, while almost 92% stated that they have not intentionally purchased counterfeit electronics. Overall, 54.5% of the respondents in the sample have stated that they have not willfully purchased a counterfeit item during the past year. It is important to note that, since questions with regards to counterfeit purchase focused on the three categories of products of interest for this study it is conceivable that respondents may have purchased other types of counterfeit goods in the past 12 months. However, as products within the three categories are the most seized within the EU and Romania (see Chapter 2), although one cannot exclude it with utmost certainty, it is unlikely that a vast number of consumers of other types of counterfeit goods would be found in the study sample.

---

[89] Calculated by converting the sums in RON to USD, using the annual average exchange rate for 2016 (1 USD = 4.0292 RON) published by the Romanian National Bank (2016).

Table 5.1. Descriptive statistics: Dependent and independent variables (n=348)

	Mean	Mode	Median	SD	Min	Max
Counterfeit consumption in past 12 months:						
Counterfeit apparel	-	1	1	1.05	1	5
Counterfeit perfumes	-	1	1	.62	1	5
Counterfeit electronics	-	1	1	.41	1	5
Total counterfeit purchases	-	3	3	1.67	3	15
Dichotomized counterfeit purchase	-	0	-	.49	0	1
Social Learning:						
Deviant peer association	-	6	6	2.52	3	15
Deviant family association	-	3	6	2.72	3	15
Positive definitions	-	6	6	1.97	3	12
Neutralizing definitions	-	4	4	1.16	2	8
Imitation	-	3	6	1.81	3	12
Differential reinforcement:						
Approval	-	4	4	1.37	2	8
Punishment	-	8	8	2.70	4	16
Low Self-Control	69.04	69	69	8.21	47	93

Concerning the attitude towards counterfeits and counterfeiting, the vast majority of the respondents (91%) stated that counterfeits are not a better choice than genuine goods, and that fakes do not benefit consumers (78%), while more than half of them (67%) did not deem counterfeits as being good value for money. By contrast, while some of them (31 %) stated that based on price, they prefer counterfeit products over originals, and a similar amount of

respondents did not consider buying counterfeits as being wrong (28%), only about 10% of the participating students stated that they like shopping for counterfeits. The great majority of the respondents (94%) considered that people buy counterfeits because of the high prices of the genuine goods, and that the legal consequences of purchasing such products are minimal (86%). Overall, respondents expressed a more negative attitude towards product counterfeiting as an overwhelming majority (71%) scored low on the (reduced) ATC scale (Mode: 4; SD: 1.41).

Table 5.2. Descriptive statistics: Control variables (n=348)

	Mean	Mode	Median	SD	Min	Max
Age	23.59	20	21	6.76	18	72
Age 3 groups	-	1	1	0.73	1	3
Disposable income	-	2	-	1.01	1	4
Disposable income NIS	-	0	0	0.39	0	1
Gender	-	1	-	4.53	1	2
Region	-	1	-	.76	1	5
Transylvania	-	1	1	.41	0	1
Graduate (Education dummy)	-	0	0	.41	0	1
Attitude towards counterfeit goods (ATCG)	-	10	10	2.62	5	18
Attitude towards counterfeiting (ATC)	-	4	4	1.41	2	8
Social desirability	-	6	7	2.11	3	12
Opportunity	4.04	2	2	5.83	0	65

When asked to indicate when was the first and last time they have knowingly purchased a counterfeit product[90], compared to the time of survey implementation, the earliest report was 314 months (Mean: 53.6; Mode: 5; SD: 53.6; Range: 1 – 314), while the most recent report was 0 months (Mean: 8.94; Mode: 3; SD: 11.01; Range: 0 – 57). In addition, among respondents who

---

[90] Responses available only for those respondents who have indicated that they have knowingly purchased counterfeits within the past 12 months (n = 158).

stated that they have knowingly purchased at least one counterfeit item from the three categories
of interest for this study within the past year, the majority (78%) indicated that they have
purchased the item/s for themselves (Mode: 3; SD: .71), while a little over half (almost 55 %)
indicated that they have purchased the item/s due to their lower purchase price compared to the
genuine product (Mode: 1; SD: 1.15). In terms of opportunity (Mean: 4.02; Mode: 2; SD: 5.89;
Range: 0 – 65), 39% of the respondents indicated that they knew about two counterfeit purchase
locations, while almost 16% indicated that they knew one counterfeit purchase location. See
Table 5.1and Table 5.2 for a synthesized overview of the descriptive statistics.

Form of the distribution

Dependent variables

As discussed in Chapter 4, the nature of the collected data has forced the use of only one
of the intended measurements of volitional purchase of counterfeit goods within the past 12
months. The five-point scales (1= never; 5= 10 or more times) measuring the amount of apparel
(including accessories), perfumes and electronics purchased in the specified time period were
therefore analyzed before being summed into a single scale. The modal category for each of the
three types of products examined in the study was "never" (apparel = 61%; perfume = 78%;
electronics = 92%). Analyses of the form of the distribution revealed that all three variables are
positively skewed[91] and leptokurtic[92]. This was an indication that the summed scale (Mode = 3;
SD = 1.67) would also be positively skewed (2.377) and leptokurtic (7.824). With "reasonably
large samples" (meaning 200 + cases – Pallant, 2010, p. 57), statistically significant skewness
will not "make a substantive difference in the analysis" (Tabachnick & Fidell, 2013, p. 80), the

---

[91] Skewness values for each variable: Counterfeit purchase of apparel and accessories = 1.706; Counterfeit purchase
of perfume = 2.634; Counterfeit purchase of electronics = 5.12.
[92] Kurtosis values for each of the three variables: Counterfeit purchase of apparel and accessories = 2.365;
Counterfeit purchase of perfume = 8.650; Counterfeit purchase of perfume = 33.224.

actual size of the skewness (the worse the value is father from zero) being more important than its significance level (Pallant, 2010; Tabachnick & Fidell, 2013). On the other hand, while kurtosis can result in an "underestimate of the variance" (Pallant, 2010, p. 57; Tabachnick & Fidell, 2013), "the impact of departure from zero kurtosis also diminishes" (Tabachnick & Fidell, 2013, p. 80) in large samples[93]. Nevertheless, the departure from normality was beyond the acceptable values for symmetry and kurtosis (between -2 and +2) (George & Mallery, 2010).

Furthermore, since a closer inspection revealed no outliers that could be removed with good reason, the data were subjected to transformation procedures in order to make it more amenable to analysis. Transformation of the variable is preferable to the deletion or modification of the outliers, as it "typically reduces the number of outliers" and is "likely to produce normality, linearity, and homoscedasticity among the variables" (Tabachnick & Fidell, 2013, p. 92). Given that the data is clustered at lower values, transformations were carried out by moving down Tukey's (1977) ladder of powers[94]. The log 10 transformation, skewness (1.3) and kurtosis (1.1) approached normal values, bringing the skewness and kurtosis within acceptable range (George & Mallery, 2010). In addition, standard deviation decreased quite a lot (SD = .327), but the fact that skewness value is more than double the standard error (SE = .13) is cause for concern. In addition, Tabachnick and Fidell (2013) caution that while data transformations are recommended as a solution for "outliers and for failures of normality, linearity, and homoscedasticity, they are not universally recommended" (p. 86). Although the "safest strategy…is to use transformations" (Tabachnick & Fidell, 2013, p. 78), and although

---

[93] "…underestimates of variance associated with positive kurtosis (distributions with short, thick tails) disappear with samples of 100 or more cases; with negative kurtosis, underestimation of variance disappears with samples of 200 or more" (Tabachnick & Fidell, 2013, p. 80).
[94] Tukey (1977) describes a methodical approach to re-expressing variables using a power transformation. This list presented in visual form arranges transformations in order of the magnitude of their effect on the variable.

transformation has indeed normalized the data it also makes interpretation difficult, which is a "compelling reason not to" (Tabachnick & Fidell, 2013, p. 78; p. 83) transform the variable.

Therefore, an alternative strategy was selected: the re-coding of the dependent variable as a dichotomous variable (0 = "No counterfeit purchase in past 12 months"; 1 = "Purchased counterfeits in past 12 months"). The recasting of the DV as a dichotomous measure (Mode: 0; SD.49) has affected the analysis plan in terms of the type of regression analyses to be carried out, but dichotomization also has consequences in terms of measurement and statistical analyses, which will be discussed in detail in Chapter 6.

Independent variables

Unlike the dependent variable, all the scales measuring SLT constructs – d*eviant peer association* (skewness: .938; kurtosis: .887), *definitions favorable to counterfeit purchase* (skewness: -.028; kurtosis: -.36), *neutralizing definitions* (skewness: .335; kurtosis: .163), *imitation* (skewness: .42; kurtosis: -.142), and *differential reinforcement/punishment* (skewness: -.415; kurtosis: .554) –, as well as the Grasmick et al. scale measuring LSC constructs (skewness: .113; kurtosis: .165), were normally distributed.

Control variables

In terms of the form of their distribution, the social desirability scale (skewness: .124; kurtosis: -.100), the attitude toward counterfeit goods (skewness: .334; kurtosis: .202) and the attitude towards counterfeiting (skewness: .272; kurtosis: -.262) scales were normally distributed, but opportunity was positively skewed (4.728) and extremely leptokurtic (36.37). Although the extreme kurtosis value might seem distressing, the sample is large enough for the underestimates of variance associated with positive kurtosis to disappear (Tabachnick & Fidell, 2013, p. 80). In addition, logistic regression makes no assumptions about the distribution of the

117

predictor variables as they do not have to be normally distributed, linearly related to the dependent variable or of equal variance within each group (Pallant, 2010; Tabachnich & Fidell, 2012, p. 439), therefore the variable could be used as is. Nevertheless, as outliers can affect the results, a closer look at the distribution was warranted. This revealed two outliers (scores: 65 and 67 respectively) which differ greatly from other respondents, but removing the outliers did not significantly alter the skewness (5.361) or the kurtosis (40.733).

Similarly, the age of the respondents was positively skewed (2.794) and leptokurtic (10.309), which is to be expected with student population data. Upon consulting with the BBU Data Communications Center, the veracity of the outliers was confirmed. Using the strategy recommended by Tabachnick and Fidell (2013) the score on the offending variable for the outlying case was assigned a one unit larger raw score than the next most extreme score in the distribution (viz. 54). However, although this had an impact on the form of the distribution in terms of kurtosis (5.354), it remained positively skewed (skewness: 2.325). Further solutions proposed to address the issue include transformations, or recoding the offending continuous variable into "a number of discrete groups" (Pallant, 2012, p. 95). Since transformation of the age variable would make it difficult to interpret, in order to make the data amenable to analysis, the age variable was recoded as an ordinal variable: 1 = Typical undergraduate aged (18-22); 2 = Typical graduate aged (23-27); 3 = Atypical student aged (28 and over)[95]. This brought skewness and kurtosis values within the acceptable range (skewness: 1.145; kurtosis: -.215). Although it may be argued that this type of recoding leads to a loss of information regarding individual differences (similar to that in the case of dichotomization discussed by MacCallum, Zhang, Preacher, & Rucker, 2002), in this case, due to the nature of the study sample (similar age

---

[95] Typical undergraduate aged (18-22): 66%; Typical graduate aged (23-27): 19%; Atypical student aged (28 and over): 15%.

college students), this loss is marginal. Therefore, in the specific case of this variable, this method is preferable to transformation (Pallant, 2010; Tabachnick & Fidell, 2013).

Examining multivariate outliers

While univariate outliers (discussed in the previous section) are usually handled by transformations which "pull univariate outliers closer to the center of a distribution, thereby reducing their impact" (Tabachnick & Fidell, 2013, p. 74), multivariate outliers (cases with unusual combinations of scores on two or more variables) should be examined after transformations have been carried out because the Mahalanobis distance statistic is sensitive to issues of normality (Tabachnick & Fidell, 2013). Accordingly, using the same strategy as described in the case of the dependent variable, multiple transformations were carried out on the variable measuring opportunity. The log10 transformation, significantly reduced skewness (1.134) and kurtosis (1.139) and these approached normal values, moving well within the acceptable value range (George & Mallery, 2010). It is important to note however that, although as a result of the transformation standard deviation decreased quite a lot (SD: .29), the fact that skewness values remained more than double the standard error (SE: .02), is cause for concern.

Following the analysis, three cases were identified as having a statistically significant Mahalanobis distance (at $p < .001$): 59 (respondent 112), 213 (respondent 392), and 210 (respondent 389). These cases have been evaluated by running separate regression analyses with a dummy variable created to distinguish them from the other cases as the dependent variable (Tabachnick & Fidell, 2013). Since results revealed several variables as statistically significant predictors of the three cases (see Table 5.3), their scores on the variables that cause these cases to be multivariate outliers was also examined. These are described in detail in the following paragraphs, and in a summarized form in Table 5.3 at the end of this section.

119

Respondent 112 (a 20 year old Romanian ethnic, undergraduate female from Transylvania) with a maximum score on the differential peer association scale (15), also scored high on the counterfeit purchase scales for different products (counterfeit apparel: 5; counterfeit perfume: 3; counterfeit electronics: 1), and reported a very high amount of known counterfeit purchase locations (i.e. opportunity: 67). However, the same person scored low on the ATC scale (4) and high on the ATCG scale (14), which is odd, as one would expect similar scores on the two scales measuring attitudes towards counterfeiting and counterfeit goods respectively. In addition, this respondent also scored high on the Grasmick et al. scale, while scoring low on the social desirability scale, indicating high levels of self-control and low levels of social desirability. Conversely, Respondent 392 (a 22 year old Romanian ethnic, undergraduate female from Transylvania) scored the lowest on the Grasmick el al. scale (38), but highest on the social desirability scale (12), while also scoring high on the counterfeit purchase scales for different products (counterfeit apparel: 5; counterfeit perfume: 3; counterfeit electronics: 3), but low on the known counterfeit purchase location (4). In addition, this respondent also exhibited inconsistent scores on the ATCG and ATC scales, scoring high on the first (16) and low on the latter (3). Finally, respondent 389 (a 41 year old Hungarian ethnic, undergraduate female from Transylvania) scored below the modal score on the Grasmick et al. scale (61), but relatively highon the social desirability scale (8), and reported counterfeit purchase within the past 12 months in all three categories (counterfeit apparel: 5; counterfeit perfume: 1; counterfeit electronics: 1). Despite the difference in terms of demographic characteristics compared to the other two respondents, respondent 389 also exhibited the same discrepancy in terms of scores on the ATCG (13) and ATC (6) scales.

Based on this information, there might be some questions about how results will generalize to individuals who for some reason exhibit inconsistent attitudes towards the issue of counterfeiting or counterfeit goods. On the other hand, these may be very unusual subjects, or just careless respondents (Meade & Craig, 2012). Either way, since multivariate outliers can significantly influence results as they "may distort the results in almost any direction" (Tabachnick & Fidell, 2013, p. 77), (as mentioned at the beginning of this chapter) these case were excluded from further analyses, thus reducing the sample size to 348.

Table 5.3. Multivariate outliers

Case #	ID #	Mahal. distance	χ^2 (df=14)	Variables
59	112	38.306		Imitation** Opportunity** Gender*
210	389	41.262	37.697	Purchased counterfeit apparel* Differential peer association* Imitation** Age* Region**
213	392	55.344		Purchased counterfeit apparel* Purchased counterfeit electronics* Imitation** Neutralizing definitions** Social Desirability** Low self-control**

*p <.05; **p <.01.

Bivariate analysis

Based on the literature on product counterfeiting, consumer characteristics play an important role in the willful consumption of counterfeit goods. Accordingly, the bivariate

analysis looked at various subgroups within the sample, examined the relationship between buyer demographic and psychographic characteristics and counterfeit purchase, as well as between SLT/LSC concepts and the volitional consumption of fakes.

The inspection of various subgroups within the study sample (see Table 5.4 and Table 5.5) revealed that a larger percent of females (49.5) than males (35.6%) have reported knowingly purchasing counterfeits in the last year. Also, a higher percentage of graduate students (48%) than undergraduates (44%) have reported volitional purchase for the same time period. It is important to note however that, while the difference in terms of counterfeit purchase between males and females is statistically significant (z=-2.404; p = .016) the difference between graduates and undergraduates is not (z=-.592; p = .553).

The examination of consumer demographic characteristics revealed that – in accordance with expectations and some previous findings on Romanian population (see Dabija et al., 2014) – there was a statistically significant[96] relationship between gender (χ^2 = 5.239; p =.022) and counterfeit purchase. Nevertheless, it is important to note that, although statistically significant, the relationship between gender and the reported purchase of fake goods in the study sample is modest at best (phi = .129). In addition, results of the bivariate analyses performed on complete cases (n=281) were also not statistically significant (χ^2 = 1. 704; p =.192). Taken together (the size of the association and the results from complete cases), these suggesting that the statistically significant results obtained from the imputed data are likely due to the increase in sample size, rather than an actual association.

In terms of historical/cultural regions, a difference in the number of students who have admitted to buying fakes within the past 12 months was observed (see Table 5.4). Nevertheless, although more Moldavians (55%) and Wallachians (58%) than Transylvanians (43%) reported

---

[96] Indicated by the results of the Chi-square test for independence (with Yates Continuity Correction for 2x2 tables).

buying counterfeits, surprisingly, the relationship between historical regions and the purchase of

counterfeit goods was not statistically significant ($\chi^2 = 7.877$; $p = .100$). This may be due to fact

that, despite the multi-regional nature of the BBU student population (see Chapter 4, Figure 4.1),

the study sample contained a low percentage of respondents from regions other than

Transylvania (18%)[97], leading to very unequal group sizes that affect the outcome of some

statistical analyses (Pallant, 2010). Recoding the variable into two distinct groups[98] (1 =

Transylvania; 0 = Other regions) and examining the consumption of counterfeits between

respondents from Transylvania and those from other historical regions also failed to indicate a

statistically significant difference ($\chi^2 = 4.576$ $p = .109$)[99].

Table 5.4. Bivariate analysis: Counterfeit purchase by region (n=348)

Counterfeit purchase in the past 12 months	Romania			Moldova Republic	Hungary	Total
	Transylvania	Moldavia	Wallachia			
No	58%	45%	42%	34%	47%	55%
Yes	42%	55%	58%	66%	53%	45%

On the other hand, the statistically significant ($\rho = .245$; $p = .000$) positive relationship

between counterfeit purchase and respondent's attitude towards counterfeiting was strong in the

study sample. Analyses performed on complete cases (n=281) showed similar results ($\rho = .456$;

$p = .000$), thus substantiating results based on the imputed data. In accordance with previous

---

[97] This ratio was not significantly different when only complete cases (n=281) were taken into consideration: Transylvanian 83%; Other regions 17%.

[98] Also necessary in order to satisfy assumptions of logistic regression with regards to the number of cases in the sample and the number of predictors that need to be included in the model, with Pallant (2010) suggesting collapsing or deleting categories with limited numbers.

[99] Similar results were obtained when examining only complete cases (n=281), the Yates Continuity Correction for 2x2 tables indicating no statistically significant association: $\chi^2 = 2.478$; $p = .115$.

research (e.g., Wee et al., 1995), more individuals who scored high on the ATC scale[100] (63.3%)[101] – denoting more positive attitude towards counterfeiting – have indicated having knowingly purchased counterfeits from at least one of the three categories of interest within the past year. In terms of gender differences, a larger percentage of males (36%) than females (26%) reported positive attitudes towards counterfeiting, while a larger percentage of males (48%) than females (37%) with positive attitudes towards counterfeiting reported having knowingly purchased counterfeits. Also in accordance with previous research results, results of the bivariate analysis indicated the existence of a statistically significant positive relationship between the attitude towards counterfeit goods and volitional purchase in the sample ($\rho = .53$; $p = .000$)[102].

By contrast, – similarly to findings by Berland, 2013 – there seems to be no statistically significant association in the study sample between the consumption of counterfeit goods and the age of the respondents[103] ($r = .053$; $p = .316$), or their educational level ($\chi^2 = .01$; $p = .982$) (see Table 5.5). In addition, neither levels of disposable income ($\chi^2 = 3.261$; $p = .455$), nor ethnicity ($\chi^2 = 1.343$; $p = .246$) were found to have a statistically significant relationship with the consumption of fakes within the study sample. The bivariate examination of the relationship between age, educational level, disposable income, and ethnicity with counterfeit purchase using complete cases (n=281), yielded comparable results. Accordingly, no statistically significant association was found between age ($r = .049$; $p = .414$/ U $=9774$; $p = .820$), education ($\chi^2 = .01$; p

---

[100] The decision regarding what represents 'high' or 'low' scores on the ATC scale was made by splitting the variable at the median value, as this is the mid-point of the sample, and it truly splits the sample into halves (MacCallum et al., 2002).
[101] The percentages are somewhat different for the dataset containing only complete cases (61% vs. 39%), but the difference is not statistically significant; $\chi^2 = .000$; p=.987.
[102] The analysis repeated on complete cases only (n=281) yielded highly similar results: $\rho = 0.566$; $p = .000$).
[103] If the data are skewed or truncated (such as the case of the age variable in this study), violating the assumption of normality required by Pearson's r, the Mann-Whitney nonparametric measure of association might be more appropriate (Larson-Hall, 2010; Pallant, 2010; Statistical analyses using SPSS, 2016). Accordingly, a Mann-Whitney U test was performed, which yielded similar results ($U =14689.8$; $p = 0.73$).

= .982), disposable income (χ^2 = .734; p = .392), ethnicity (χ^2 = .266; p = .606) and counterfeit purchase.

Table 5.5. Bivariate analysis: Counterfeit purchase by gender and education (n=348)

Counterfeit purchase in the past year	Gender		Education	
	Male	Female	Undergraduate	Graduate
No	64.4%	50.5%	55%	52%
Yes	35.6%	49.5%	45%	48%

The lack of association between age and counterfeit consumption may be due to the fact that the sample is quite homogenous in terms of age, the large number of undergraduates causing the distribution to be highly positively skewed, with few respondents over what could be called "average school age". Similarly, the very high percentage of Romanians (83.2%) in the study sample (compared to other ethnicities) may make it difficult to detect significant differences in the consumption of counterfeit goods. In terms of education and levels of disposable income, the way these are measured (undergraduate vs. graduate; 1 = Less than 100 RON; 2 = Between 101 and 300 RON; 3 = Between 301 and 500 RON; 4 = Over 501 RON) may have an effect on the ability to detect significant differences, in the sense that categories may be too close together.

In search of a meaningful dichotomization, the author consulted the most recent information available from the National Institute of Statistics (NIS, 2015b; NIS, 2016) with regards to monthly average income and expenditure (4th quarter 2015). These statistics indicated that in the fourth quarter of 2015 an average Romanian household spent almost three thirds (71%) of its monthly income (2496 RON = $619) on consumption of goods and services (NIS, 2016). However, most of this amount is directed towards covering basic needs such as food and

non-alcoholic beverages (36.8%), dwelling related expenses (22.7%), transportation and communication (11%), with only 24.6% (445 RON = $110) directed towards non-basic expenses such as clothing/footwear, and miscellaneous products and services (NIS, 2015b; see Table 5.6). Based on this information the disposable income variable was recoded as follows: categories 1 through 3 were recoded into 0 = Below average disposable income; while category 4 was recoded into 1 = Average disposable income. Based on this division, a little over 80% of the respondents fall into the "below average" category, while almost 20% are in the "average disposable income" category. Nonetheless, bivariate analyses based on this dichotomized variable also indicated a lack of statistically significant relationship: $\chi^2 = 1.344$; $p = .246$.

Table 5.6. The level and structure of the total consumption expenditure of an average Romanian household expenditure (4th quarter 2015)

Product or service type	Percentage	RON
Agro-food products and non-alcoholic beverages	36.8	665.16
Alcoholic beverages and tobacco	8.0	144.92
Clothing and foot wear	7.0	126.33
Dwelling, water, electricity, gas and other fuels	18.3	330.09
Furnishings and dwelling equipment and maintenance	4.4	79.31
Health	4.4	79.19
Transport	6.1	110.92
Communications	4.9	89.29
Recreation and culture	3.6	64.99
Education	.5	9.77
Hotels, cafes and restaurants	1.7	30.43
Miscellaneous products and services	4.3	77.56
Total consumption expenditure	100	1807.96

Upon examining factors extraneous to the consumer, results of the Pearson product-moment correlation revealed a statistically significant positive relationship ($r = .372$; $p = .000$)

between opportunity[104] and counterfeit consumption, but this amounts to only 13.6 % of shared variance. It is important to keep in mind however, that although the medium[105] effect size is statistically significant, the significance of r is strongly influenced by sample size, and even very small correlations may reach statistical significance in large samples (n=100+) (Pallant, 2010, p. 135). Also, one can also argue that, the way it is measured (number of known counterfeit purchase locations), opportunity is not extraneous to the consumer, but it may be measuring a different concept than opportunity: how informed one is about the opportunity to purchase counterfeit goods. These issues will be discussed in more detail later in this chapter as well as in Chapter 6.

Looking at the relationship of the dependent variable and SLT and LSC concepts, results of the bivariate analyses revealed a statistically significant positive relationship between counterfeit purchase and all but one SLT components, and a statistically significant negative relationship between the purchase of fakes and low self-control (ρ = -.174; p = .001)[106]. Accordingly, differential peer association (ρ = .468; p = .000), differential family association (ρ = .502; p = .000), positive definitions (ρ = .231; p = .000), neutralizing definitions (ρ = .197; p = .000), imitation (ρ = .274; p = .000), and differential reinforcement/approval (ρ = .230; p = .000) were all positively related to counterfeit consumption.[107] Conversely, differential

---

[104] Similarly to age, opportunity was not normally distributed, but positively skewed and extremely leptokurtic. Pearson's r is highly susceptible to non-normal data; therefore, a non-parametric test was also conducted for this variable as well: U = 8987.9; p = .000. Also, results from these tests conducted on the dataset containing complete cases only were comparable: r = .364; p = .000; U = 5239; p = .000.

[105] Using Cohen's (1988) criteria of .10 for small effect, .30 for medium effect, and .50 for large effect.

[106] Since the measure for low self-control is not a continuous variable per se (although it can be treated as one for the purposes of some statistical analyses), Spearman Rank Order Correlation (rho) was used rather than Pearson product-moment correlation (Bachman & Paternoster, 2004; Pallant, 2010; Statistical analyses using SPSS, 2016). In this context, it is important to note that nonparametric tests "tend to be less sensitive than their more powerful parametric cousins" (Pallant, 2010, p. 213).

[107] Results from complete cases only (n=281) were comparable: differential peer association (ρ = 0.483; p = .000) and differential family association (ρ = .518; p = .000), positive definitions (ρ = . 226; p = .001) and neutralizing definitions (ρ =.201, p =.001), imitation (ρ = .277; p = .000), differential reinforcement/approval (ρ = .216; p = .000) were all positively related to counterfeit consumption, while low self-control was negatively related (ρ = -.186; p =

reinforcement/punishment (ρ = -0.122; p = .02) was negatively correlated to volitional purchase of fake goods. In addition, the large effect size of both differential peer association and differential family association seems to suggest – in line with Dabija et al. (2014) and Lee & Yoo (2009) – that friends and relatives who approve of the behavior may act as contributors/inhibitors to the consumption of counterfeits depending on whether they approve or disprove of the behavior.

With regards to imitation, the notion that "deviant peers also provide role models for behavior, leading to imitation or parroting of offending" (Burrus et al., 2013, p. 1162), has been previously examined by others (Akers & Jensen, 2006). This seems to be supported by the results of the bivariate analyses as the association between counterfeit purchase and imitation is highly significant and has the second highest effect size among SLT components. In addition, consistent with previous findings, the influence of differential reinforcement/approval and differential reinforcement/punishment on counterfeit purchase, although relatively small, supports the notion that associating with deviant peers increases exposure to reinforcements. Finally, the positive definitions component has a comparable statistically significant effect size to the approval and punishment components. These results suggest that most of the examined SLT components play a significant role in counterfeit consumption (at least for the present sample), but that some components play a more prominent role.

Finally, in terms of the statistically significant (but marginal) negative relationship between counterfeit purchase and low self-control, this may be due to the socially desirable answers on behalf of the study subjects. At this point it is important to mention that results revealed a statistically significant relationship between social desirability and counterfeit

---

.002). However, when only complete cases were analyzed, no statistically significant association was found between differential reinforcement/punishment (ρ = -.112; *p* = .061) and counterfeit purchase.

consumption (see Table 5.7 for imputed data; and Table 5.8 for complete cases only). This suggests that individual reports with regards to counterfeit purchase within the past 12 months may have been influenced by their desire to appear in manner that is socially acceptable, casting some doubt as to the veracity of their account. The influence of social desirability, as well as of other control variables, will be evaluated more extensively during regression analyses presented in the following section. For an overview of the results of the bivariate analyses discussed here see Table 5.7 (for imputed data) and Table 5.8 (for complete cases only).

Table 5.7. Summary of bivariate analysis: Counterfeit purchase (n=348)

Independent variables	Mean	Mode	χ2	r/ρ	U	Phi/V
Age	23.59	20	-	.053 (.315)	14689.8 (.730)	-
Gender	.71	1	5.239 (.022)	-	-	.129
Ethnicity (dummy)	.83	1	1.343 (.246)	-	-	-
Education	.22	0	0.001 (.982)	-	-	-
Historical region	1.21	1	7.877 (.107)	-	-	-
Transylvania (dummy)	.81	1	4.576 (.109)	-	-	-
Attitude towards counterfeiting	4.13	4	-	.245 (.000)	-	
Attitude towards counterfeits	9.78	10	-	.530 (.000)		
Disposable income	2.40	2	3.261 (.455)	-	-	-
Disposable income NIS	.19	0	1.344 (.246)	-	-	-
Social Learning:						
Deviant peer association	6.60	6		.468 (.000)		
Deviant family association	5.82	3		.502 (.000)		
Positive definitions	6.62	9		.234 (.000)		
Neutralizing definitions	3.87	4	-	.197 (.000)	-	-
Imitation	5.05	3		.274 (.000)		
Differential reinforcement:						
Approval	4.38	4		.230 (.000)		
Punishment	8.45	8		-.122 (.020)		
Low Self-Control	69.04	69	-	-.179 (.001)		-
Opportunity	4.21	2	-	.372 (.000)	8987.9 (.000)	-
Social desirability	7.30	6	-	-.342 (.000)	-	-

Note. Values enclosed in parentheses denote the corresponding p-values.

Table 5.8. Summary of bivariate analysis: Counterfeit purchase. Complete cases only (n=281)

Independent variables	Mean	Mode	χ2	r/ρ	U	Phi/V
Age	23.61	20	-	.049 (.414)	9774 (0.820)	-
Gender	.72	1	1.704 (.192)	-	-	.129
Ethnicity (dummy)	.83	1	0.266 (.606)	-	-	-
Education	.20	0	0.010 (.982)	-	-	-
Historical region	1.23	1	7.877 (.107)	-	-	-
Transylvania (dummy)	.83	1	4.576 (.109)	-	-	-
Attitude towards counterfeiting	1.38	1	-	.456 (.000)	-	
Attitude towards counterfeits	9.88	10	-	.566 (.000)		
Disposable income	2.40	2	2.040 (.564)	-	-	-
Disposable income NIS	.20	0	0.734 (.392)	-	-	-
Social Learning:						
Deviant peer association	6.58	6		.483 (.000)		
Deviant family association	5.90	3		.518 (.000)		
Positive definitions	6.41	6		.226 (.000)		
Neutralizing definitions	3.87	4	-	.201 (.001)	-	-
Imitation	5.04	3		.277 (.000)		
Differential reinforcement:						
Approval	4.43	4		.216 (.000)		
Punishment	8.38	8		-.112 (.061)		
Low Self-Control	69.50	69	-	-.186 (.002)		-
Opportunity	4.43	2	-	.364 (.000)	5239 (.000)	-
Social desirability	7.23	6	-	-.349 (.000)	-	-

Note. Values enclosed in parentheses denote the corresponding p-values.

Multicollinearity Diagnostics

Prior to estimating binary logistic regression models, multicollinearity and diagnostic tests were performed. The variance inflation factor (VIF) and tolerance values were examined for any reasonable indication of multicollinearity among independent variables used in the models (Pallant, 2010; Tabachnick & Fidell, 2013). Results of the multicollinearity diagnostics (see Table 5.9) indicated that independent variables were not strongly correlated with each other, as no Variance inflation factor (VIF) scores were above 10 or lower than .01, and there were no Tolerance values below .10 (Pallant, 2010; Tabachnick & Fidell, 2013).

Table 5.9. Multicollinearity diagnostics (n=348)

Variables	Tolerance	VIF
Deviant peer association	.48	2.06
Deviant family association	.42	2.32
Positive definitions	.45	2.19
Neutralizing definitions	.61	1.61
Imitation	.64	1.55
Differential reinforcement approval	.54	1.84
Differential reinforcement punishment	.75	1.32
Low self-control	.81	1.22
Attitude towards counterfeiting (ATC)	.52	1.89
Attitude towards counterfeits (ATCG)	.48	2.08
Social desirability	.67	1.48
Opportunity	.85	1.16
Ethnicity (dummy)	.92	1.08
Amount of disposable income (dummy NIS)	.82	1.20
Education (dummy)	.87	1.14
Historical region (dummy)	.95	1.04
Gender (dummy)	.88	1.12

Table 5.9 (cont'd)

Age	.71	1.39

In addition, as visible in Table 5.10, the VIF and tolerance values differ only marginally from those registered when completing the diagnostics on complete cases only.

Table 5.10. Multicollinearity diagnostics. Complete cases only (n=281).

Variables	Tolerance	VIF
Deviant peer association	.46	2.16
Deviant family association	.41	2.44
Positive definitions	.57	1.74
Neutralizing definitions	.66	1.49
Imitation	.66	1.50
Differential reinforcement approval	.53	1.88
Differential reinforcement punishment	.76	1.31
Low self-control	.84	1.19
Attitude towards counterfeiting (ATC)	.69	1.43
Attitude towards counterfeits (ATCG)	.47	2.12
Social desirability	.66	1.51
Opportunity	.82	1.21
Ethnicity (dummy)	.91	1.09
Amount of disposable income (dummy NIS)	.85	1.68
Education	.88	1.29
Historical region (dummy)	.93	1.06
Gender (dummy)	.88	1.12
Age (ordinal)	.73	1.36

The multicollinearity diagnostics results did not indicate the existence of "extremely high correlations among predictor variables" (Tabachnick & Fidell, 2013, p. 445), results suggesting that that there is little concern regarding multicollinearity among independent variables while

confirming that none of the variables to be included in the regression model were redundant. However, based on theoretical and methodological considerations (especially in terms of scales that may be tapping into the same concept), for the concept of differential reinforcement only the differential reinforcement/punishment scale was retained for further analysis. Binary regression models were estimated using both imputed data as well as complete cases only.

Binary logistic regression model utilizing all variables on imputed data (n=348)

The results of the bivariate analyses indicated the existence of a relationship between counterfeit purchase and SLT components, but also between low self-control and the consumption of fakes. Due to the forced transformation of the dependent variable into a dichotomous outcome variable, a binary logistic regression model (Menard, 2002; Pallant, 2010; Tabachnick & Fidell, 2013) was estimated to examine the impact of deviant peer/family association, positive definitions, differential reinforcement/punishment, imitation, as well as low self-control on the consumption of counterfeit goods. It is important to note at this point that logistic regression allows the researcher to use any mix of continuous, discrete, and dichotomous predictor variables (Tabachnick & Fidell, 2013, p. 439). In addition, the predictors do not have to be normally distributed, linearly related to the outcome variable, nor of equal variance within each group (Tabachnick & Fidell, 2013, p. 439). However, categorical variables have to be dummy coded before entering them into the model. This was performed only for variables that were not previously dummy coded, while previously dummy coded variables were re-examined in order to confirm proper coding.

In order to avoid model misspecification[108] (Menard, 2002), other theoretically relevant variables, such as demographic and psychographic characteristics, and opportunity, but also a

---

[108] Excluding theoretically relevant variables poses the risk of overestimating the effect that the independent variables included in the regression model have on the dependent variable (Menard, 2002).

control for social desirability were included in the regression model. It is important to mention that although the differential reinforcement/approval measure was excluded, model misspecification can be avoided, as the concept of differential reinforcement is adequately measured/ represented by the differential reinforcement/punishment scale.

Accordingly, the model contained seventeen (17) independent variables: six SLT predictors (differential peer association; differential family association; positive definitions; neutralizing definitions; imitation; differential reinforcement/punishment), one LSC predictor (low self-control), and ten control variables (age, gender, ethnicity, region, disposable income, attitude towards counterfeiting and counterfeits, education, opportunity and social desirability).

The test of the full model containing all the predictors against a constant-only model was statistically significant (χ^2 (17, n = 348) = 227.23, p = .000), indicating that the predictors, as a set, were able to distinguish between respondents who reported purchasing counterfeit goods within the past 12 months and those that reported no counterfeit purchase for the same period. The model as a whole explained between 48.24% (Cox and Snell R square) and 64.52% (Nagelkerke R square) of the variance in purchasing status, and correctly classified 87.13% of cases, which constitutes a 32.35% improvement over the 54.78 percent accuracy in classification of the intercept-only model.

As visible in Table 5.11, six independent/control variables made a unique, statistically significant contribution to the model: deviant peer association, deviant family association, attitude towards counterfeit goods, opportunity, age and gender.

Table 5.11. Binary logistic regression model. All variables, using imputed data (n=348).

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Deviant peer association	.317	.105	9.042	1	.002	1.373	1.116	1.689
Deviant family association	.304	.097	9.773	1	.001	1.355	1.120	1.640
Positive definitions	-.040	.120	.123	1	.743	.961	.759	1.216
Neutralizing definitions	-.191	.181	1.115	1	.293	.826	.578	1.178
Imitation	-.104	.107	0.945	1	.331	.911	.730	1.112
Differential reinforcement:								
Punishment	-.039	.066	.346	1	.564	.962	.844	1.096
Low self-control	-.031	.022	1.877	1	.172	.969	.927	1.013
Attitude toward counterfeiting	-.130	.162	.647	1	.423	.877	.637	1.207
Attitude towards counterfeits	.596	.109	29.775	1	.000	1.814	1.465	2.248
Social desirability	-.087	.097	.815	1	.37	.916	.757	1.108
Opportunity	.301	.070	18.224	1	.000	1.352	1.177	1.554
Age	.070	.030	5.493	1	.019	1.072	1.011	1.137
Education	-.343	.422	.668	1	.419	.710	.310	1.626
Historical region (dummy)	-.340	.397	.815	1	.406	1.715	.328	1.561
Ethnicity (dummy)	.508	.501	1.029	1	.311	1.663	.622	4.444
Gender	.785	.387	4.116	1	.044	2.195	1.026	4.694
Disposable income (dummy)	-.022	.479	.003	1	.962	.977	.381	2.503
Constant	-7.796	2.760	7.979	1	.005	.000	0	0

Before interpreting the results presented here, cases with standardized residual values of over 2.5 and below -2.5 were assessed in order to reveal the type of individuals whose purchasing behavior the model might have issues explaining. In total, nine cases were identified as having standardized residual values of over 2.5 and below -2.5, constituting cases for which the model does not work well (Respondent ID = 180; 214; 258, 298; 318; 356; 397; 405 and 545)[109]. These cases were further investigated, revealing that one respondent (ID=318) was predicted to answer as having willfully purchased at least one counterfeit item, but instead indicated no purchase. All the other outliers for which the model did not perform well (ID = 180; 214; 258, 298; 356; 397; 405 and 545) the predicted outcome was "No purchase", but instead they were in the 'Purchase" category.

Furthermore, individual examination the outliers in the solution revealed additional information with regards to these cases. Accordingly, respondent number 180 (a 20 year old, Romanian male undergraduate from Transylvania who has indicated having purchased counterfeit goods) scored very low on the SLT scales, but very high on the self-control scale (83), and on the social desirability scale (10). Respondent 214 (a 19 year old, Romanian female undergraduate from Transylvania who has purchased fakes) also scored low on the SLT scales, as well as below the median on the self-control scale (64) and the social desirability scale (6).

A 24 year old Romanian male graduate student from Transylvania, respondent 258 has purchased counterfeit goods in the past 12 months, but scored low on the SLT scales, but close to the median on the self-control scale (71) and the social desirability scale (6). A 35 year old undergraduate Romanian male from Transylvania, identified as respondent 318, indicated no purchase within the past 12 months. This respondent scored high on the positive definitions (11) and the imitation (10) scales, but low on the ATC scale (4), while scoring high on the social

---

[109] Eight out the nine were the same as those identified in the imputed dataset (the exception being respondent 298)

desirability scale (9). Respondent number 365 was also a Romanian male in his thirties (31). This graduate student from Transylvania who indicating no counterfeit purchase in the past year, scored relatively high on the Grasmick et al. scale (80), while also scoring on the higher end of the social desirability scale. Also scoring high on the social desirability scale (12), a 22 year old, Romanian undergraduate male from Transylvania, indicated at least one counterfeit purchase within the past year. At the same time, this individual scored low on all SLT measures, and close to the median on the low self-control scale. Finally, respondent 545 (a 24 year old Romanian female graduate student from Transylvania) who indicated having purchased counterfeits, and scored around the median values for SLT and low self-control measures, but indicated 0 known counterfeit purchase locations.

Based on the results of this analysis, it seems that model might have issues in explaining the behavior of individuals for whom social desirability is a priority. However, it may also be deficient in the case of individuals who may have answered the questionnaire dishonestly or carelessly (e.g. respondent 545).

In addition to finding outliers in the solution, the Hosmer and Lemeshow (HL) Goodness of Fit (GOF) Test[110] – considered by some as being "most reliable test of model fit available in SPSS" (Pallant, 2010, p. 176) –, did not provide support for the above discussed model ($\chi^2 =$ 20.805, p = .016.)[111]. Furthermore, the contingency table for the HL GOF test in SPSS indicated an approximately even spread of the subjects among the deciles of risk for both outcomes (purchase/no purchase) across all five imputations, suggesting that the model is inadequate (Tabachnick & Fidell, 2013, p. 461).

---

[110] The test works by dividing the predicted probabilities into deciles (10 groups based on percentile ranks) followed by computing a Pearson chi-square that compares the predicted frequencies to the observed ones. Nonsignificant chi-square valuesindicate a good overall model fit (Newsom, 2010; Tabachnick & Fidell, 2013).
[111] For this test in order to support the model the significance value should be >.05 (Pallant, 2010, p. 176).

This poses the situation of having a very high (pseudo) R^2, but having a model that is inconsistent with the data[112] (Allison, 2014). Since "a poorly fitted model can give biased or invalid conclusions on the statistical inference based on the fitted model" (Liu, 2007, p. 8), the goodness of fit or the lack-of-fit of a model must be tested before making statistical inferences. Therefore, both the reasons of why the logistic regression model might fit the data inadequately, as well as additional and alternative means of assessing goodness of fit were explored.

The issue in this particular situation may lie with the HL GOF test, the use of which is not recommended with a small n (less than 400) (Hosmer, Lemeshow, & Sturdivant, 2013, p. 167), and which has also been shown to have some (other) serious problems[113] (Allison, 2014; Hosmer, Hosmer, Le Cessie, & Lemeshow, 1997; Liu, 2007). Hosmer et al. (2013) provide a detailed description of various alternatives, but in addition to the fact that all of them have advantages and disadvantages (Liu, 2014), they are either only available in other statistical software packages (such as SAS[114] or STATA), or not available at all. Accordingly, although Hosmer et al. (2013) recommend performing goodness of fit analyses (p. 185), and employing multiple methods in assessing the adequacy of the fitted logistic model (p. 200), due to the limitations placed on this analysis in terms of software packages available for performing statistical analysis of imputed data at the study site, other means of assessing goodness of fit statistic had to be limited to those available in SPSS.

---

[112] It is important to note that the pseudo R^2 is not a suitable to measure the predictor power of the model in logistic regression, "because we can't explain the variation in a binary dependent variable the same way as we do for continuous dependent variables" (Liu, 2007, p. 13). The pseudo R^2 may be small even when the logistic regression model is adequate for the data, but the opposite situation is also possible (Allison, 2014; Liu, 2007).

[113] Allison (2104) indicated that this particular test can be (1) highly sensitive to number of groups; (2) the model fit may worsen when adding a highly significant interaction or non-linearity to a model, while adding a non-significant interaction or non-linearity may improve the fit; (3) finally, the GOF may have low power. For a comprehensive review, as well as alternative measures see Hosmer et al. (2013).

[114] Statistical Analysis System.

Consequently, the Receiver Operating Characteristic (ROC) curve (Hosmer et al., 2013), a means of description of classification accuracy, was employed. Ranging from 0.5 to 1.0, it provides a measure of the model's ability to discriminate between subjects who have the outcome of interest versus those who do not (Hosmer et al., 2013, p. 173). The area under the curve was .906 with 95% confidence interval (.872, .939), constituting an "outstanding discrimination" (Hosmer et al., 2013, p. 177) which was statistically significant ($p = .000$), meaning that that the logistic regression classified the group significantly better than by chance.

Since the results of the two model fit assessment methods contradict each other, a decision with regards to the model fit was difficult to make. The information obtained from these GOF assessments was not enough evidence to conclude with some certainty whether the logistic model does or does not fit the data. Due to the lack insufficient evidence to the contrary, a conservative approach was taken by considering the possibility that the model does not fit. Accordingly alternative models had to be considered, using careful consideration suggested by Hosmer et al. (2013): keeping in mind the distinction between getting a model to fit and having the theoretically correct model (p. 200). Since the potential source of the inadequate fit is unknown, two alternative approaches were considered: (1) running the binary logistic regression model using complete cases only (n=281); (2) based on those discussed above with regards to the potential validity issues with the scales meant to measure the concept of opportunity and the concept of differential reinforcement/approval, re-specifying and re-estimating the logistic regression model, this time omitting the offending measures.

Binary logistic regression model with all the variables, using complete cases only (n=281)

As discussed previously, repeating the statistical analyses using the complete cases only grants more confidence in the results based on imputed data (Tabachnick & Fidell, 2013, p. 71). Accordingly, the above described model was tested using complete cases only.

The logistic regression model estimated using complete cases was found to be statistically significant (χ^2 (17, n = 281) = 197.333, p = .000), and it explained between 51% (Cox and Snell R square) and 68% (Nagelkerke R square) of the variance in purchasing status. The results are highly similar to the ones obtained from the imputed dataset, although the improvement in the percent explained is to be noted (51% vs 48.24%, and 68% vs. 64.52%). In terms of improvement over the intercept only model, the full model correctly classified 86.6% of cases, which constitutes a 34.6% improvement over the 52 percent accuracy in classification of the intercept-only model. In addition, the results of the Hosmer and Lemeshow Goodness of Fit Test also provided support for the model (χ^2 = 11.570, p = .180). Furthermore, similarly to results on the imputed data, the area under the ROC curve was .923 with 95% confidence interval (.891, .956), indicating an outstanding discrimination (Hosmer et al., 2013, p. 177), which was statistically significant (p = .000), meaning that that the logistic regression classified the group significantly better than by chance. However, as visible in Table 5.12, compared to the imputed dataset, only four independent/control variables made unique, statistically significant contributions to the model: deviant peer association, deviant family association, attitude towards counterfeit goods, and opportunity (two controls, age and gender did not contribute in a statistically significant manner).

Table 5.12. Binary logistic regression model. All variables, on complete cases only (n=281).

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Deviant peer association	.349	.132	6.973	1	.008	1.418	1.094	1.837
Deviant family association	.273	.111	6.037	1	.014	1.314	1.057	1.634
Positive definitions	-.052	.137	.142	1	.706	.950	.726	1.243
Neutralizing definitions	-.157	.203	.604	1	.437	.854	.574	1.271
Imitation	-.129	.122	1.112	1	.292	.879	.691	1.117
Differential reinforcement: Punishment	.019	.076	.065	1	.799	1.019	.879	1.183
Low self-control	-.030	.027	1.178	1	.278	.971	.920	1.024
Attitude toward counterfeiting	-.045	.186	.059	1	.808	.956	.664	1.375
Attitude towards counterfeits	.647	.134	23.110	1	.000	1.909	1.467	2.485
Social desirability	-.104	.121	.743	1	.389	.901	.711	1.142
Opportunity	.401	.108	13.870	1	.000	1.494	1.209	1.845
Age	.060	.033	3.307	1	.069	1.062	.995	1.133
Education	-.388	.502	.599	1	.439	.678	.254	1.813
Historical region (dummy)	-.161	.474	.116	1	.734	.851	.336	2.154
Ethnicity (dummy)	.778	.590	1.737	1	.187	2.176	.685	6.916
Gender	.669	.448	2.227	1	.136	1.951	.811	4.695
Disposable income (dummy)	.129	.533	.058	1	.809	1.138	.400	3.234
Constant	-9.259	3.464	7.142	1	.008	.000	0	0

Imputed data. (n=348)

As discussed in previously[115], in addition to the concerns over the measurement error that might be introduced through the use of the differential reinforcement/approval measure which seems to tap into the same construct as the differential association measures employed in this study, there are concerns with regards to the validity of the opportunity measure. Accordingly a second binary logistic regression model which excluded both (potentially) offending measures was estimated. Leaving out the (potentially) offending measure raises concern about model misspecification. However, in tests of low self-control, opportunity is often taken as given (Gottfredson, 2006), and explicit measures of opportunity are often excluded. Also, Pratt and Cullen (2000) found that "the effect size of self-control is not influenced by whether a study included a control for opportunity or for variables assessing competing criminological theories, including social learning theory" (p. 946). Accordingly, model misspecification can be avoided.

Consequently, the full model containing sixteen variables, was found to be statistically significant (χ^2 (16, n = 348) = 193.914, *p* = .000), and it explained between 42.99% (Cox and Snell R square) and 57.5% (Nagelkerke R square) of the variance in purchasing status, while correctly classifying 82.95% of the cases (a 28.17 % improvement over the 54.78% of the intercept only model). As visible in Table 5.13, removing the two measures caused only three independent/control variables to make a unique, statistically significant contribution to the model[116]: deviant peer association, deviant family association, and attitude towards counterfeit goods. However, again, the HL GOF test did not provide support for the model (χ^2 = 20.389, *p*

---

[115] See present chapter, ATC, ATCG and Social Desirability scales section.
[116] Logically, as opportunity is one of the four variables with statistically significant contribution in the prior model.

= .012), while the ROC curve analysis again indicated outstanding discrimination (.906; lower:

.872; upper: .939; p = .000).

Table 5.13. Binary regression model. Opportunity measure removed, using imputed data (n=348)

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Deviant peer association	.350	.098	12.756	1	.000	1.419	1.171	1.720
Deviant family association	.299	.090	10.929	1	.001	1.348	1.129	1.609
Positive definitions	-.045	.111	.163	1	.688	.956	.769	1.189
Neutralizing definitions	-.293	.170	2.959	1	.086	.746	.535	1.042
Imitation	-.077	.102	.585	1	.447	.926	.758	1.130
Differential reinforcement: Punishment	-.062	.064	.936	1	.335	.940	.829	1.066
Low self-control	-.024	.021	1.279	1	.258	.976	.936	1.018
Attitude toward counterfeiting	-.054	.152	.130	1	.721	.947	.703	1.276
Attitude towards counterfeits	.572	.103	31.147	1	.000	1.772	1.449	2.166
Social desirability	-.134	.088	2.316	1	.129	.875	.737	1.039
Age	.052	.028	3.430	1	.064	1.053	.997	1.112
Education	.057	.380	.024	1	.881	1.059	.503	2.229
Historical region (dummy)	-.535	.376	2.047	1	.157	.586	.281	1.224
Ethnicity (dummy)	.277	.444	.389	1	.533	1.319	.552	3.152
Gender	.660	.355	3.466	1	.063	1.935	.966	3.878
Disposable income (dummy)	-.090	.445	.042	1	.839	.914	.382	2.187
Constant	-5.998	2.483	5.837	1	.016	.002	0	0

Complete cases only (n=281)

Repeating the above analysis using complete cases only (n=281) revealed similar results. The model was statistically significant ($\chi 2$ (17, n = 281) = 163.230, p = .000), explaining between 44.3% (Cox and Snell R square) and 59.1% (Nagelkerke R square) of the variance in purchasing status, while correctly classifying 82.67% of the cases (a 30.69 % improvement over the 51.98% of the intercept only model).

As visible in Table 5.14, removing the two measures caused the same three independent/control variables (as in the case of the imputed data) to make a unique, statistically significant contribution to the model: deviant peer association, deviant family association, and attitude towards counterfeit goods. Again, as with the previous model containing all the variables estimated using complete cases only, the HL GOF Test supported the model ($\chi 2 =$ 10.263, p = .247), while the area under the ROC curve was .923 with 95% confidence interval (.891, .956), which also indicated an outstanding discrimination which was statistically significant (p = .000). In addition, five out of the cases identified as outliers in the solution (180; 318; 356; 397; and 545) were the same as those identified in the previous model (except for three cases: 42; 265; and 55, which exhibited similar response characteristics).

Table 5.14. Binary regression model. Opportunity measure removed, on complete cases only (n=281)

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Deviant peer association	.391	.120	10.699	1	.001	1.479	1.170	1.870
Deviant family association	.275	.102	7.252	1	.007	1.317	1.078	1.608
Positive definitions	-.082	.114	.512	1	.474	.921	.737	1.153
Neutralizing definitions	-.049	.122	.158	1	.691	.953	.749	1.211
Imitation	-.312	.188	2.759	1	.097	.732	.506	1.058
Differential reinforcement: Punishment	-.010	.071	.021	1	.885	.990	.862	1.137
Low self-control	-.022	.025	.780	1	.377	.978	.932	1.027
Attitude toward counterfeiting	.063	.171	.138	1	.711	1.065	.763	1.488
Attitude towards counterfeits	.589	.120	24.123	1	.000	1.802	1.425	2.279
Social desirability	-.136	.103	1.746	1	.186	.873	.714	1.068
Age	.049	.030	2.629	1	.105	1.050	.990	1.114
Education	.094	.442	.045	1	.832	1.099	.462	2.614
Historical region (dummy)	-.484	.430	1.266	1	.260	.616	.265	1.432
Ethnicity (dummy)	.473	.506	.873	1	.350	1.604	.595	4.325
Gender	.604	.397	2.310	1	.129	1.829	.840	3.984
Disposable income (dummy)	-.071	.477	.022	1	.882	.931	.365	2.374
Constant	-7.254	2.964	5.989	1	.014	.001	0	0

Taken together, these results suggest that the instability of the results (specifically the lack of model fit) might originate in the imputed dataset, rather than issues with the measurement of certain concepts. Re-examination of the imputation procedures did not reveal any procedural issues. However, as no firm guidelines for how much missing data can be tolerated for a sample of a given size exist (Tabachnick & Fidell, 2013, p. 63), although variables with missing values over 10% were excluded from the analysis, this amount could potentially have proven to be too much for the imputation procedures to properly estimate the missing values. Due to these issues, for the interpretation of the results the prudent approach would be to rely on the results obtained from the analyses based on complete cases only.

Interpretation of the binary logistic regression results

Evaluating measures and logistic regression models

As discussed in the previous section, due to the instability of the results from binary logistic regression models estimated using imputed data, caution must be exercised in interpreting the results. In addition, another discussion, which centered on the usefulness of the opportunity measure (number of known counterfeit purchase locations), indicated that there is merit to including the variable in the binary logistic regression models. However, as the validity of the measure employed in this study is not firmly established, before interpreting the results, a discussion with regards to the role of opportunity in LSC and a short review of previously applied operationalizations of opportunity in test of LSC is considered beneficial.

As previously mentioned (see Chapter 2), one of the controversies surrounding LSC is the role of opportunity. Although Gottfredson and Hirschi (2003; 2006) have later expanded on the issue, as pointed out by Siepel et al. (2010), the view of the proponents of the theory on the role of opportunity is "contradictory" (Siepel et al., 2010, p. 170). Accordingly, although

148

Gottfredson and Hirschi (1993) state that "in the view of the theory, opportunities to commit one or another crime or analogous acts are limitless" (p. 50), being ubiquitous "to the point that they should have little causal significance for explaining crime" (Gottfredson & Hirschi, 2003; Hirschi & Gottfredson, 1993; Hay & Forrest, 2008, p. 1042), they also contend that "opportunities to commit a particular crime may be severely limited" (p.50). A similar contradictory view can be observed in terms of how opportunity operates in the context of LSC. The authors claim that self-control and opportunity may interact for specific crimes, but they are "in the general case independent" (Gottfredson and Hirschi, 1993, p. 50; Seipel & Eifler, 2010).

Furthermore, controversies extend to the definition and the operationalizations of opportunity within the context of LSC as well. In terms of definitions, in the acception of self-control theory opportunity refers chiefly to the structural conditions of access and target availability (Grasmick et al., 1993; LaGrange & Silverman, 1999). In terms of operationalization and measurement, previous tests of LSC have either taken opportunity as given and thus have omitted explicit measures of the concept (Gottfredson, 2006), or they have employed various (mostly self-reported) measures to assess to concept (Pratt & Cullen, 2000).

For example, one of the most famous tests of LSC performed by Grasmick et al. (1993) measured opportunity, as the self-reported number of occasions during a five-year recall period when a person could easily have committed a gratifying act of force or fraud "without much chance that somebody who might do something about it would quickly find out" (p. 19). Similarly, Longshore (1998) employed self-reported (perceived) instances to commit crime as a measure of opportunity by asking respondents "How many times did you see an opportunity to commit a property crime when it would have been easy to do and you were pretty sure nobody who might do something about it would quickly find out?" (p. 106). These examples can be seen

as specific measures of opportunities for crime/deviance, while another measure employed by Burton et al. (1998)[117] can be seen as being more general, in a sense oriented towards the ubiquity of opportunity for criminal acts.

Similarly, Cochran et al. (1998) assess opportunity to cheat as the "number of credit hours in which the respondents were enrolled" (p. 242), making the declared assumption that "the more credit hours a student takes, the more opportunity there is to cheat" (p. 243). More recent tests have also relied on self-reported measures of opportunity, Bolin (2004) assessing the perception of study participants regarding "the frequency and acceptability of academically dishonest behaviors at their home institution and the likelihood of academic dishonesty being detected" (p. 105), and have successfully measured the concept.

Finally, other scholars have taken a different approach, measuring opportunity based on the claim of LSC with regards to (parental) supervision restricting the opportunity for some delinquent acts (Gottfredson, 2006). For example, LaGrange and Silverman, (1999) employed a series of questions regarding parental and adult supervision to measure opportunity. However, this operationalization is restricted to a specific type of sample (adolescents and children, or other categories of individuals for which the influence of parental/adult supervision is relevant).

While neither measure of opportunity discussed above can be considered flawless, they were successfully employed in adequately measuring the concept. In addition, the meta-analysis of LSC performed by Pratt and Cullen (2000) has shown that the effect size of self-control "was not significantly affected by whether self-control was measured by an attitudinal or behavioral measure" (p. 952), or whether it was measured using the Grasmick et al, (1993) or using other scales. In addition, the effect size (which "consistently…exceeded .20" – Pratt & Cullen, 2000,

---

[117] Asked respondents to "indicate the number of evenings per week you go out for recreation activities." (Burton et al., 1998, p. 127).

p. 951) persisted even when studies controlled for other theories or opportunity. This led them to conclude that the effects of self-control are sufficiently robust not to be sensitive to various operationalizations of self-control (Pratt & Cullen, 2000). Although not stated explicitly, this may well be the case for opportunity as well.

With regards to the operationalization employed within the present study, this falls in the category of self-reported measures of opportunity. If we accept the definition of opportunity as being the structural conditions of access and target availability (Grasmick et al., 1993; LaGrange & Silverman, 1999), then in order for opportunity to exist, both conditions of access and availability of a target have to be satisfied. It is the view of the author of this dissertation that the mere existence of venues to purchase counterfeits (i.e. access) is not enough for opportunity to engage in counterfeit purchase (target availability) to exist: one has to be aware of purchasing opportunities in order be able to access the 'available target'. In addition, as venues can range from a legitimate brick and mortar vendor (either boutique or mall), a market (i.e. vendors in an organized and authorized setting), a flea market, a street vendor (i.e. a street merchant that is either mobile or stationary, with authorization, but not within an organized setting), to an individual on the street corner, a comprehensive count is practically impossible. Accordingly, the self-reported measure of opportunity employed in this study is suitable for the measurement of the concept. Consequently, based on those discussed above, results of the binary logistic regression model that includes measures of opportunity and that was estimated using complete cases only (n=281) will be considered for interpretation.

Results of the binary logistic regression model with all the variables, using complete cases only (n=281)
As a recap, it is important to mention that the logistic regression model estimated using complete cases was found to be statistically significant (χ^2 (17, n = 281) = 197.333, *p = .*000), and it explained between 51% (Cox and Snell R square) and 68% (Nagelkerke R square) of the

variance in purchasing status. The model was supported both by the results of the HL GOF Test (χ^2 = 11.570, p = .180), as well as by the statistically significant (p = .000) values of the ROC curve (.923, with 95% confidence interval: .891, .956) which indicated an outstanding discrimination (Hosmer et al., 2013, p. 177). The results indicated that four independent/control variables (out of the 17 included in the model) made unique, statistically significant contributions to the model: deviant peer association, deviant family association, attitude towards counterfeit goods, and opportunity. Conversely, the other SLT components (positive definitions, imitation, and differential reinforcement), the main component of LSC (low self-Control), as well as the demographic variables include in the model were not significant in explaining the likelihood of engaging in counterfeit purchase.

Accordingly, one of the most consistent predictor of crime and deviance, differential association (Pratt et al., 2010), was found to be a significant predictor of counterfeit purchase. Both of the two measures utilized in this study (deviant peers and deviant family), had significantly contributed to the binary logistic regression model. More specifically, for every unit increase in deviant peer association, holding all other independent and control variables constant, a .349 increase in the log-odds of counterfeit purchase can be expected. A similar increase (.273) can be expected in the log-odds of counterfeit purchase, for every one-unit increase in deviant family association, holding all the other variables constant.

In addition to the influence of deviant peers/family, as suggested by previous research findings on the topic (Cordell et al., 1996; de Matos et al., 2007; Phau et al., 2009; Swami et al., 2009; Wee et al., 1995; Swami et al., 2009; Furnham & Valgeirsson, 2007; Bian & Veloutsou, 2007; Koklic, 2011), attitudes towards counterfeit goods were found to be a statistically significant predictor of counterfeit purchase. As one would expect, a more positive attitude

towards counterfeit products, increases the likelihood of purchase. Accordingly, for every unit increase in the attitude towards counterfeit goods, a .647 increase in the log-odds of counterfeit purchase can be expected, while holding all other variables constant.

Finally, while the main component of LSC, low self-control, did not have a statistically significant contribution to the model, another component of the theory, opportunity was found to be a significant predictor of counterfeit purchase. Specifically, while holding all the other variables constant, for every unit increase in opportunity (i.e. the number of known counterfeit purchase locations), a .401 increase in the log-odds of counterfeit purchase can be expected.

In addition, the odds ratio can also be interpreted as an effect size. According to Tabachnick and Fidell (2012), the closer the value of Exp(B) is to 1, the smaller the size of the effect (p. 465). Consequently, the odds ratios for the predictor variables calculated by SPSS (see Table 5.12) can indicate the magnitude of the effect that the individual independent/control variables have on the dependent variable. Correspondingly, in terms of explanatory power, it can be said that the largest effect is produced by attitude towards counterfeiting (1.909), although opportunity (1.494), and differential peer (1.418) and family association (1.314) are not far behind.

CHAPTER 6 : DISCUSSION AND CONCLUSIONS

This dissertation investigated the applicability two criminological theories to product counterfeiting by empirically examining the relationship of Akers' (1998) Social Learning Theory (SLT), Gottfredson and Hirschi's (1990) Self-Control Theory (LSC), and the intentional purchase of counterfeit goods in a Romanian college sample. In this endeavor, comparing the ability of the two theories in predicting levels of volitional purchase of non-deceptive counterfeits in physical market environments was of particular interest.

Accordingly, the study examined the influence that peer interactions, individual 'definitions' of counterfeiting, differential peer reinforcement of the behavior, as well as the individual's level of self-control have on the purchase of counterfeit goods. In addition, it also assessed the role of opportunity in this behavior. Its setting in an Eastern European country permitted the examination of the ability of the two theories to provide explanations of deviant behaviors outside of the socio-economic and political context in (and for) which they have been developed.

In retrospect, while the theoretical examination (see Chapter 2) of how the propositions of the theories could 'translate' to willful purchase of counterfeit goods indicated that both theories have potential for providing adequate explanations of the behavior, results from the analysis of the data painted a different picture: the analysis has shown that while some elements of SLT and LSC are predictive of the volitional purchase of counterfeit goods, attitude towards counterfeit goods is still an important determinant for counterfeit purchase. In addition, demographic characteristics were also not a significant predictor for consumption of fakes.

However, due to issues discussed at length in Chapter 5, caution must be exercised both in the interpretation of the results, as well as in drawing conclusions based on these results.

Therefore, it is imperative to discuss the limitations of the data, and how the current findings relate to prior research on SLT, LSC, as well as on volitional purchase of counterfeits. For that reason, this section summarizes key findings of the study concerning the applicability of SLT and LSC to willful acquisition of counterfeit products, discusses the strengths and limitations of the study, outlines suggestions for future research on the topic, and presents policy implications of the results.

The effect of differential association, individual definitions, imitation and differential reinforcement on counterfeit purchase.

The nature of the collected data (discussed in detail in Chapters 4 and 5) has forced the use of only one of the intended measurements of volitional purchase of counterfeit goods within the past 12 months. In addition, due to the significant departure of the distribution for the remaining dependent variable, and the increased difficulty of the interpretation of the results that would have resulted from the log10 transformation (see Chapter 5), the dependent variable was recast as a dichotomous measure. Due to this alteration, a binary logistic regression was used to examine the effect of SLT components on the volitional consumption of counterfeit goods along with the bivariate analyses appropriate for the level of measurement for the variables of interest.

As indicated by Pratt et al. (2010), tests of SLT generally infer support for the theory "to the extent that positive associations between the social learning constructs and misconduct are revealed" (p. 769). Accordingly, based on bivariate results which indicated statistically significant positive relationships between the dependent variable and several SLT components, this study found evidence for a link between the volitional consumption of fakes and deviant peer association (both peers and family), positive/neutralizing definitions, imitation and

differential reinforcement[118]. Accordingly, both definitions that classify the behavior as totally acceptable, and those that lead individuals to rationalize that counterfeits don't harm anyone may influence counterfeit purchase. Similarly, both proximal and distal groups may serve as models in the initiation and continuation of the behavior. However, results from the binary logistic regression analysis indicated that only deviant peer and family association was predictive of the involvement in deviant purchasing behavior, potentially suggesting a more marked role in the behavior of interest.

Taken together, these findings are consistent with the larger literature on SLT (See for example Akers, 1998; Cullen et al, 2006; Holt et al., 2010; Pratt et al, 2005; Pratt et al., 2010; Winfree & Bernat, 1998), and they suggest that social learning processes are substantively important in the context of volitional consumption of counterfeit goods. Future research should consider testing the newly developed or adapted SLT measures used in this dissertation in various contexts and on different samples in order to further refine them and adapt them to the topic of product counterfeiting.

The effect of low self-control and opportunity on volitional consumption of fakes.

The present study found partial support for LSC in the context of willful purchase of counterfeits. As detailed in theoretical assessment of the appropriateness of LSC as explanation of volitional purchase of counterfeit goods (see Chapter 2), the consumers of counterfeit goods can be conceived as being oriented towards immediate gratification, with an appetite for risk-taking, and as such overall exhibiting the characteristics of individuals with low self-control as described by Gottfredson and Hirschi (1990), and measured by Grasmick et al. (1993). Some

---

[118] Despite the fact that the results suggested a link between differential reinforcement approval and volitional purchase of counterfeit goods, as discussed in Chapter 5, this measure may be tapping into the same construct as the differential association measures employed in this study, thus posing a potential measurement error issue. This prompted the use of the conceptually distinct differential reinforcement/ punishment scale for further analyses, as noted in the aforementioned chapter.

previous findings lent support to this assertion, Taromina and Chong (2010) reporting that risk-taking was among a series of other consumer characteristics that predicted purchasing counterfeits in a Chinese sample. This was also supported by the bivariate findings in this study, which indicated a statistically significant negative relationship between the purchase of fakes and self-control, suggesting that the lower the level of self-control, the more likely it is for one to engage in consumption of fake products. However, the effect of self-control dissipated once controls for SLT and opportunity were entered into a multivariate model. The author stated his assumption with regards to the fact that the modest negative relationship may be due to the socially desirable answers on behalf of the study subjects (see Chapter 5), but based on the results of the binary logistic regression, the loss of explanatory power of low self-control appears to be due to the effect of opportunity, deviant peer association and attitude toward counterfeits rather than socially desirable answering.

However, it is also important to note the fact that due to the limited focus of this study on just three categories of goods, as well as selection bias may have also affected the results with regards to self-control. Accordingly, it is conceivable that low self-control may not have a significant impact on the volitional purchasing of these particular products, but at the same time have a substantial effect for other categories of goods. One example would be luxury goods or high end fashion goods which are typically not available to the majority of consumers. In addition, LSC postulates that individuals with low self-control are impulsive, short sighted, and temperamental with a preference for simple physical tasks (Gottfredson & Hirschi, 1990, p 89-90). As such, it is conceivable that such individuals are less likely to carry out a complex task

such as completing a lengthy questionnaire, which may also introduce a bias in the collected data[119].

Conversely, bivariate results indicated the existence of a statistically significant positive relationship between opportunity (another important component of LSC) and counterfeit consumption. In addition, results of the multivariate analysis indicated that opportunity was predictive of the involvement in deviant purchasing behavior, while the most important individual-difference cause of crime according to LSC, low self-control (Cullen et al, 2006; Gottfredson, 2006), was not found to be predictive of counterfeit purchase.

The effect of opportunity was not surprising. As stated in the theoretical assessment of the appropriateness of LSC as explanation of volitional purchase of counterfeit goods (see Chapter 2), opportunity (access to fake goods) may play a bigger role than in the case of other deviant behaviors. Others have also suggested that one of the reasons for the purchase of such products is the fact that they are easily accessible and available while genuine products are not (Furnham & Valgeirsson, 2007; Gentry et al., 2001). The results from the present study suggest that this may indeed be the case. In addition, as discussed in Chapter 3, the chances to purchase fake goods are still abundant in the region despite recent advancement in enforcement against IP infringements, making such purchases to be effortless.

Based on the results discussed above, it can be said that the findings place the present study on the list of LSC analyses in which "social learning variables continued to have a strong effect and to increase significantly the multivariate models' explained variation (Pratt & Cullen, 2010, p. 952), expanding the list of deviant behaviors in which social learning processes play a significant role, as well as the list of deviant behaviors for which low self-control has not provided and adequate explanation. In terms of recommendations for future research,

---

[119] The presence of such a bias was assessed using Student's t-test, presented in more detail in Appendix D.

investigators should consider utilizing both attitudinal and behavioral measures (e.g.: observing risky behavior), as well as more established measures of opportunity in testing LSC in the context of volitional purchase of counterfeit goods.

The effect of demographic and psychographic characteristics on counterfeit purchase

Previous findings with regards to the effect of demographic and psychographic variables are mixed, some suggesting an influence on the volitional consumption of fakes, while others indicate no effect. Some studies have identified "product variables and price, vendor characteristics, social and cultural context variables, demographics, and psychographic variables as determinants and moderating variables for consumers' intention to purchase counterfeit products (Eisend & Schuchert-Güler, 2006, p. 16). Accordingly, examining the influence of such variables on the volitional consumption of counterfeit goods was paramount in this study.

Perhaps the most consistent psychographic indicators of counterfeit purchase are attitude towards counterfeiting/counterfeits. Accordingly, in line with previous research, bivariate results indicated statistically significant positive relationship between volitional counterfeit purchase and the respondent's attitude towards counterfeiting (Cordell et al., 1996; de Matos et al., 2007; Phau et al., 2009; Swami et al., 2009; Wee et al., 1995), towards counterfeit goods (Swami et al., 2009; Furnham & Valgeirsson, 2007; Bian & Veloutsou, 2007; Koklic, 2011) and intentional consumption of fakes, suggesting that both the general and specific attitudes may be linked with deviant purchase. Nevertheless, multivariate results indicated that only the (more specific) attitudes towards counterfeit products were predictive of counterfeit purchase when controlling for the effect of the other independent variables.

On the other hand, a series of demographic characteristics, were found to have no effect on the reported volitional purchase of counterfeit goods. Accordingly, no relationship was found

159

between gender, age, education, the amount of disposable income, the cultural region of origin, the ethnicity of the respondent and counterfeit consumption in the study sample.

While several previous studies have identified gender differences in terms of attitudes towards counterfeits (e.g., Bloch, et al., 1993; Ang et al., 2001; Phau et al., 2009; Wee et al., 1995), willingness to purchase counterfeits (Vida, 2007), and even purchasing behavior across different categories of counterfeit goods (Cheung & Pendergast, 2006; Dabija et al., 2014), the present study did not find a statistically significant difference in the purchasing habits of men and women in the study sample[120]. Although this may have been influenced by socially desirable answering, it is not a unique finding: accordingly, while Dabija et al. (2014) have found gender differences in a Romanian sample, Berland (2013) indicated no gender difference in a European sample.

Similarly, age was not influential in the case of the study sample. This is contrary to previous findings (see Cheung & Prendergast, 2006; Berlan, 2013; Dabija et al., 2014; Tom et al., 1998), which have indicated that age is an essential factor in consumption of fakes. However, the non-significance of age may be due to the homogenous nature of the sample in terms of age (see Chapter 5), rather than a lack of influence on the process.

Previous findings on the influence of education are mixed, with some suggesting that it has an inhibiting factor depending on the category of fake product (Cheung & Prendergast, 2006; Dabija et al, 2014), while others have found that age does play a part in the voluntary purchase of counterfeit goods (Bloch et al., 1993; Berland, 2013). In the present study, the lack of the significance of education may be due to the nature of the study sample, which included mostly undergraduates, making the detecting of statistically significant differences difficult.

---

[120] While results were statistically significant for the bivariate analysis conducted on imputed data, these were not confirmed by bivariate results on complete cases (see Table 5.7 and Table 5.8).

Similarly, evidence on the influence of income levels is also mixed (see Ang et al., 2001; Cheung & Prendergast, 2006; Tom et al., 1998). The present study did not find a statistically significant influence of the amount of disposable income on counterfeit purchase. However, as discussed in Chapter 5, the measurement employed in the present study may have affected the ability to detect significant differences, in the sense that response categories may be too close together. Consequently, although results suggest a lack of influence, these may be due to measurement error rather than a genuine lack of association between income and counterfeit purchase.

One of the main goals of the study was to examine the effect of cultural influences on the process of volitional consumption of counterfeit goods, as well as on the ability of the two theories to explain this deviant purchasing behavior. However, bivariate results revealed that no statistically significant difference exists in the number of students from different regions, or with different ethnic background who have admitted to buying fakes within the past 12 months. Nevertheless, this might be due to the small number of students from other regions than Transylvania, and non-Romanian ethnics in the study sample, rather than the lack of cultural influence in the process.

Ascribing to Eisend and Schuchert-Güler (2006), the author considers that investigating cultural influences constitutes a promising approach when researching determinants of not only counterfeiting but also counterfeit consumption. Also, the investigation of the influence of various demographic characteristics is crucial, as it could contribute to the generation of a profile of the volitional consumer of counterfeits. Accordingly, in order to be able to examine the influence of demographic characteristics on volitional consumption of fakes, future research

should expand and compare research sites where cultural differences vary only slightly[121] (as the present dissertation intended), or make additional efforts to recruit adequate number of students from each region of interest. In addition, these should expand the sample to include various age groups, individuals with different educational levels, and apply more refined measures of disposable income.

Study strengths and limitations

As with every sociological study, there are a series of limitations that need to be acknowledged and their influence on study results discussed. These relate to the research design, sampling, the response rate, and measurement of the concepts of interest. Recommendations for future research are also discussed.

<u>*Study design*</u>

The cross-sectional survey design employed by this study is unsuitable to establish whether a causal relationship exists between deviant peer association, low self-control and volitional purchase of counterfeit goods. Although an attempt to establish temporal precedence was made by including a question relating to the time of the first counterfeit purchase this suffered from a series of flaws (only individuals who have purchased counterfeits answered the question, information recall issues) which made it unfit for such a purpose. In addition, agreeing with Longshore (1998), a longitudinal design allowing the measuring of self-control before the occurrence of opportunity to purchase counterfeits, and the at the point of the actual commission of such acts would be beneficial in terms of establishing causal order in future tests of LSC in the context of counterfeit purchase.

---

[121] Comparative studies of very different cultures have already been conducted (see for example Swoboda et al., 2013), but examinations of the effect of slight variations in culture are scarce.

Data collection method

The use of self-reports – the most commonly used form of social measurement (Singleton & Straits 2005) represent best practice in terms of testing both LSC and SLT (Thornbery & Krohn, 2000), as they may yield more honest responses on sensitive topics (Groves et al., 2009) such as the deviant behavior of interest for this dissertation. However, this also means that the data suffer from the limitations of all self-reported data which raises questions about the accuracy of the data. Socially desirable answering, unit and item nonresponse are just a few of the potential issues (Groves et al., 2009). To reduce the risk of socially desirable answering the present study provided assurances with regards to the anonymity and confidentiality of the responses given by participants in the form of a Research Participant Information and Consent Form included at the beginning of the online survey.

Furthermore, self-administered web surveys have additional weaknesses such as coverage and nonresponse error (Groves et al., 2009; Singleton & Straits, 2005). Although all enrolled students must provide an email address at the time of enrollment to BBU, there is no assurance that these are working email addresses or that students actually check them on a regular basis. Since BBU does not have a unitary email system for university communication, nor do the regulations require students to regularly check the email addresses that they have provided upon enrolling, despite the best efforts of the researcher and the BBU ITM structures, the actual coverage is unknown.

Sample and response rate

Although buyers of counterfeits are not restricted to a certain demographic (Ledbury, 2007), the use of a college sample significantly limits the generalizability of the study findings to other populations or settings. In addition, as discussed in Chapter 5, the final response rate for

the present study was 9%. Despite the fact that electronic surveys tend to generate lower response rates than mail surveys (Singleton and Straits, 2005), and that the response rate is similar to other web surveys on the same student population (see Chapter 4), the low response rate raises the issue of nonresponse bias[122] (i.e. the likelihood of a self-selected sample that reflects only the views and behavior of those who chose to respond), as well as that of underestimated variances, both of which can affect the accuracy of survey results: nonresponse can affect both the descriptive and the analytic statistics (in this case the regression coefficient) (Groves et al., 2009, p. 191).

Unfortunately these can be addressed mainly by achieving higher response rates[123], or by testing for non-response effects and making corrections to the original data in order to maximize validity. Despite the efforts put forth by the researcher (increasing the sample size, follow-ups), a higher response rate could not be achieved. Others consider that instead of focusing on the response rate, researchers should focus on whether "response propensity and the survey variable are correlated" (Groves et al., 2009, p. 189). Groves et al. (2009) identified three types of unit nonresponse (noncontacts; refusal to participate; and inability to participate), each with their distinctive causes and distinctive effects on the statistics generated from a particular survey (p. 192). The number of noncontacts within the context of this particular web-based survey is unknown, as the request to participate and the link to the survey itself was administered by the BBU ITM services (as per the agreement that allowed access to the sample), and the number of mail delivery failures was not recorded or reported to the researcher. Nevertheless, since nonresponse bias flows from noncontact nonresponse only when the nonresponse are linked to

---

[122] It is important to note however that, nonresponse rates do not predict the nonresponse error of individual estimates in a survey by themselves (Groves et al., 2009, p. 211).

[123] Although there is evidence that "merely increasing response rates is an overly simple reaction to fears of nonresponse bias in survey estimates" (Groves et al., 2009, p. 210), and other strategies should be devised in order to tackle the issue.

the survey statistic measured (Groves et al., 2009), the statistics of interest for this study are expected not to be heavily influenced by this type of nonresponse.

Another type of nonresponse, refusal to participate, is more likely to have operated within the present study. Research suggests that certain types of respondents tend to refuse participation more than others (males; adults who live alone, etc. – Groves et al., 2009). As volitional counterfeit purchase is related to at least one of these attributes, a degree of nonresponse bias may be present in the estimates. Accordingly, results with regards to the effect of gender on volitional purchase of counterfeit goods within the study sample should be interpreted with caution.

Finally, nonresponse due to the inability to participate has been insufficiently researched. Therefore little is known about the (diverse) causes, and the (equally diverse) statistics affected by this type of nonresponse (Groves et al., 2009, p. 201). Despite those discussed above, it is important to note that (other thing being equal), the larger the nonresponse rate, the higher risk of nonresponse error (Groves et al., 2009, p. 201). Although a formal test of whether nonresponse and the dependent variable are related is beyond the scope of this dissertation, future research should draw on the emerging literature on the topic and assess this issue.

As the only evident part of the quality impacts on nonresponse is the nonresponse rate, future research should consider tools for reducing nonresponse rates (Groves et al., 2009, p. 201 -202). One such tool that can be employed in the context of web surveys of Romanian students is using incentives in order to increase response rate (although some have found incentives to be associated with more homogeneous and lower response rates – Cook, Heath & Thompson, 2000, p. 832).

The novelty of the research topic also meant that several measures had to be developed or adapted to fit the topic at hand. While the measures employed were tested in terms of reliability and validity, additional research is required in order to increase confidence of their validity. In addition, while the issues surrounding the opportunity measure have been amply discussed (see Chapter 5), another measure (disposable income) warrants additional consideration. The measure for this concept (see Table 4.3) excluded some values (specifically 101 and 501), meaning that it is not exhaustive. Nevertheless, since the value of 1 RON is .25 USD (which in Romania is barely enough for one pretzel), this is unlikely to have affected the results. In addition, literature on the topic indicates that "responses to income questions in surveys are often rounded by the respondents" as "people tend to remember the magnitude of a value (usually, as a magnitude of ten) and the first digit(s) and forget the rest" (Hanisch, 2005, p. 40). Hanisch (2005) also indicated that when individuals are asked to recollect the amount from memory, they produce a rounded value because they "edit zeros for digits they do not remember" (p. 40), while if they do not know the value, their guess produces a random number, which also tends to be highly rounded. On the other hand, using brackets (like in the present study), raises the issue of biases that may be introduced in the measurement process, however it is difficult to tell whether the rounding of the respondents or the biases of the brackets affect the results more (Hanisch, 2005). Although there is indication that using income ranges decreases the number of item nonresponses (which can have the same impact on a statistic as unit nonresponse discussed above, but with the "damage" limited to statistics produced using data from the affected items – Groves et al., 2009, p. 208). Accordingly, while the measure utilized did have flaws, these are unlikely to have produced significant effects on the study results.

A more serious issue in terms of measurement, is the (forced) dichotomization of the dependent variable, and that of several control variables (disposable income, region of origin, ethnicity), which can have potential "substantial negative consequences" (MacCallum et al., 2002, p. 38; Shadish, Cook & Campbell, 2002). Although the dichotomization of the dependent variable clearly fits the two situations in which dichotomization is justified[124], the restriction of range can still have such negative effects as loss of effect size and power in the case of bivariate relationships (MacCallum et al., 2002; Shadish, Cook & Campbell, 2002). Due to the awareness of the possibility of the increase of sample correlations following dichotomization, especially in the case of small samples (MacCallum et al., 2002), where feasible, the bivariate analyses for this study were conducted both with the dichotomized and the original variable, thus eliminating the possibility of the operation of the aforementioned negative effects.

Finally, the results of the study are based on a non-deceptive counterfeiting situation (i.e. a purchase where the consumer recognizes the product as being a fake), with voluntary and knowledgeable consumption of fake goods. However, as mentioned in Chapter 2, products that are commonly referred to as 'counterfeit' or 'fake' may fall in one of the categories arranged along a genuine-counterfeit continuum, constituting a continuum of deceptiveness rather than a dichotomy (fake-genuine). As argued by Eisend and Schuchert-Güler (2006), integrating the degree of deceptiveness in further research on counterfeiting may be a" fruitful step for further research" (p. 16).

Missing data and data imputation

As discussed in Chapter 5, bivariate and multivariate analyses suggested instability of the results obtained using the imputed dataset. Results also suggested that this instability (more

---

[124] More specifically the "situation where the distribution of a count variable is extremely highly skewed" (MacCallum et al., 2002, p. 38), and where a "clear support for the existence of two types or taxons within the observed sample" (MacCallum et al., 2002, p. 38) exists.

precisely the lack of model fit) might originate in the imputed dataset, rather than issues with the measurement of certain concepts. Although the re-examination of the imputation procedures did not reveal any procedural issues, and the amount of missing values (<10%) could potentially have proven to be too much for the imputation procedures to properly estimate the missing values. Accordingly, binary logistic regression results were interpreted for complete cases only. This has further decreased the sample size (281 vs. 348), which could have affected the ability to detect the effect of the independent variables on counterfeit purchase.

Interactive effects

Finally, the current study did not assess the interaction between SLT and LSC, or between self-control and opportunity. Gottfredson and Hirschi (1987) provided the theoretical basis for the interaction effects between low self-control and deviant peer associations, stating that there is a mediating effect due to the fact that people acquire the propensity to commit crime, then find delinquent friends, and then commit delinquent acts (p. 597). This has since been evaluated by a series of studies, but the evidence of the interaction between low self-control and deviant peer associations is mixed (Pratt & Cullen, 2009). In comparison, more evidence points to the existence of an interaction between opportunity and low self-control. Such an interaction was also expressly specified by Gottfredson and Hirschi (1990). They indicated that high levels of criminal behavior result from the interaction between low self-control (the propensity to commit crime) and opportunity (the opportunity to engage in deviance/analogous behavior) (Gottfredson & Hirschi, 1990; Grasmick et al., 1993; Pratt & Cullen, 2000). Since low self-control will result in a crime or analogous behavior only when the opportunity to engage in the behavior is present (Pratt & Cullen, 2000, p. 931-933), it is plausible that the effect of self-control is contingent on criminal opportunity (Longshore, 1998). Accordingly, the "interaction

between self-control and opportunity with regard to analogous acts is entirely germane"

(Longshore, 1998, p. 105) in studies of LSC, which means that future research should examine

the effect that the interaction between opportunity and self-control has on counterfeit purchase.

Contribution to theory and research.

Notwithstanding these limitations, the current study has several strengths, which point to

its larger value. As noted in Chapter 1, in addition to the dearth of research and a lack of reliable

data on the topic (GAO, 2010), especially in this specific region of the EU, there is also an

absence of application of criminological theory to the product counterfeiting in general, not to

mention volitional counterfeit purchase (Heinonen, Holt, & Wilson, 2012; Hollis, Fejes, Fenoff

& Wilson, 2015; Hollis & Wilson, 2014). This study added to this less developed area of

product counterfeiting and criminological literature by applying the tenets of SLT and LSC to an

emerging criminological topic, and also advancing the understanding of consumer behavior with

regards to infringing products.

Also, by investigating counterfeit purchase in an East European college sample, this

study examined the generalizability of Gottfredson and Hirschi's (199) general theory of crime,

as well as of Aker's (1998) social learning theory outside of the Western context for and in

which these have been developed. Finally, the findings from this study identified which social

learning processes are substantively important in the context of volitional consumption of

counterfeit goods, alongside opportunity and consumer psychographic characteristics, all of

which may have practical importance in the development of consumer oriented anti-

counterfeiting strategies.

As others have indicated, for the time being, criminology "does not provide a strong

theoretical framework for understanding the nature of product counterfeiting and counterfeiters

or the risk factors associated with victimization" (Heinonen, Holt, & Wilson, 2012, p. 366). The lack of available and reliable data has unquestionably contributed to the lack of a clear understanding of product counterfeiting from a criminological perspective (Heinonen, et al., 2012), but so has the limited application of criminological theory to this phenomenon (Hollis et al., 2014). Improving the current state of affair is possible through the application of various criminological theories with a proven track record in explaining deviant behavior (if the focus is on the demand side of counterfeiting[125]), or criminal behavior (if the focus is on the supply side). In this effort, researchers may follow the example of the literature on piracy which already has a history in applying various criminological theories to this (closely related) crime type (e.g. : Burruss, Bossler, & Holt, 2013; Higgins, 2004; Higgins, Fell, & Wilson, 2006, 2007; Higgins, Wolfe, & Marcum, 2008; Morris & Higgins, 2010; Wolfe & Higgins, 2009).

Replicating and extending the limited amount of studies that have addressed this gap in the counterfeiting and criminological literature is also essential moving forward. In this respect, empirical assessments of studies that have attempted a theoretical application of criminological theories (e.g.: routine activities theory – Hollis, Fejes, Fenoff & Wilson, 2015; Hollis & Wilson, 2014), or other theoretical frameworks that build on theories outside criminology (e.g.: Fejes & Wilson, 2013) are required.

Furthermore, criminologists must also consider the possibility of the fact that product counterfeiting defies broad classification (Heinonen, Spink, & Wilson, 2014), and that various theoretical propositions have to be integrated in order to generate and adequate explanation. However, an indispensable step in building such a theory is constituted by the repeated application of established criminological theories to the phenomenon, the replication of studies

---

[125] This may well be the case even if volitional purchase of counterfeits is criminalized in certain countries, as time may be needed for this behavior to be categorized as illicit in the collective morale.

such as the present dissertation, and the assembling of consistent empirical evidence that can guide both theory building as well as future research.

Policy implications

Based on the findings of this study, (cautious) suggestions can be made with regards to policy aimed at the reduction of volitional consumption of counterfeits. These policy implications are obviously mainly linked to the two criminological theories examined here.

The present study found that individuals are influenced in their purchasing behavior by their peers and family, that they utilize positive and neutralizing definitions to justify their behavior, and that they tend to imitate observed deviant purchasing behaviors. Accordingly, information campaigns aimed at various purchaser age groups educating consumers about the costs and harms associated with the purchase of counterfeit goods (as suggested by Chakraborty, Allred, Sukhdial, & Bristol, 1997; Norum & Cuno, 2011) would be suited to address these issues. These campaigns should focus primarily on changing the perceived notions with regards to the victimless nature of counterfeiting, by raising awareness regarding the negative economic and public health consequences of fake products, and stress the immoral nature of the behavior. These campaigns or educational programs may involve communication both from the government bodies (public interest messages), as well as action from brand owners (risk communication), but their main goal is to make consumers understand that buying counterfeit goods is not a "smart purchase" that enables them to own the items they want "while preserving … purchasing power" (Berland, 2013, p. 63), but a deviant behavior that enables crime (both organized crime and terrorism), and affects their economic well-being, and (potentially) their health. This will make it harder for consumers to rationalize their behavior, and potentially

reduce the demand for such goods (Penz, Schlegelmilch, & Stöttinger, 2008). Also, the heightened awareness with regards to the global threat of terrorism may aid these efforts.

Alternatively, these campaigns can stress the fact that consumers are actually victims of a crime, being deceived by criminals who make considerable amount of profit, and provide resources for those willing to report instances of counterfeit purchase. Data suggests that online consumers who were victimized considered their victimization serious enough to file a complaint with the Internet Crime Complaint Center, or even to law enforcement and other authorities (Heinonen, Holt, & Wilson, 2012). Although it is unclear at this point how this would translate to volitional consumption in physical market settings – as these individuals may not see themselves as victims, but rather as risk-taker beneficiaries of a business transaction –, these options should nevertheless be explored.

Furthermore, since results suggest that the influence of peers and family are important with respect to volitional purchase of fakes (both association with these and their approval of such deviant behavior), policy should draw on these results and those from previous studies which suggest similar influences of peers/family and even of acquaintances (de Lucio & Valero, 2014) on purchasing decision. These influences may be harnessed by targeting larger audiences (beyond consumers), through nationwide sensitization campaigns/programs similar to those employed for environmental or social issues. Affecting the number of deviant peers/family members, and lessening their level of approval for volitional purchase of fakes, may reduce the amount of deliberate consumption of counterfeit goods. In addition, as (consistent with previous studies) results revealed a relatively strong influence of consumer attitude towards counterfeits and counterfeiting in general, these campaigns/programs should also contain an attitudinal component as well.

The content and modes of delivery can be modeled after other successful campaigns, such as the anti-tobacco campaigns (Bala, Strzeszynski & Cahill, 2008), but regardless of the model utilized, evaluation of the effectiveness of such campaigns/programs is essential in refining future interventions aimed at this issue. It is important to note however that, consumer/peer education, or changing consumer/societal attitudes towards purchasing may not be sufficient. Some scholars suggest that legal sanctions for consumers may be necessary (Albers-Miller, 1999; Narum & Cuno, 2011), although the effects of criminalizing volitional purchase has not been adequately studied. Nevertheless, the author considers that criminalization unduly transfers responsibility for this crime on the shoulders of consumers, who in many cases do not have the ability to identify counterfeit products from the original (Dabija et al., 2014; Fejes & Wilson, 2013). These types of sanctions should only be used in combination with other actions aimed at combating the phenomenon (targeting the supply side of product counterfeiting), which together may form a coherent and effective strategy.

Based on the results of the present study with regarding opportunity and low self-control, other preventative measures may also be devised. Since when opportunities for consumption of fakes are present, it may be more difficult for individuals with low self-control to refrain from purchasing such products, a more efficient enforcement of IP laws, which may reduce the number of sale outlets where counterfeits can be purchased, could prove useful. These actions would not only limit access to fakes, but may potentially deflecting consumers towards legitimate goods (whether branded, or cheaper, but legal alternatives). In addition, programs aiming to reduce the opportunities and rewards of volitional purchase of counterfeit goods also can enhance the level of self-control, although directly targeting self-control though specifically devised interventions may have more success.

Irrespective of the mode of intervention, or its target, in generating policies in this field, the cultural context specific to Romania must be taken into account. Previous governmental efforts such as stoppirateria.ro[126] should be evaluated in terms of effectiveness, and redesigned and recast to better fit the purpose. In addition, collaborative responses to the problem should be considered, as cooperative effort on behalf of the government, industry and various citizen groups may yield more effective solutions.

Suggestions for future research

Based on those discussed above, several general and specific suggestions for future research can be formulated and synthesized. First and foremost, similarly to Heinonen et al. (2012), the author considers that substantive exploratory studies disclosing basic characteristics and correlates of volitional purchase of counterfeit goods can benefit criminology. Accordingly, exploring the phenomenon from a criminological perspective will expand the knowledge on the topic.

Additionally, future studies should expand the samples to include individuals from the general population, as this would improve the ability to generalize the study findings to a larger population. This could also significantly improve our understanding of the phenomenon, and contribute to the development of a "profile" of the willful consumer.

In addition to exploratory studies, formal test of criminological theories are also required. In this respect, as discussed above, employing a longitudinal design would be beneficial in terms of establishing causal order in the context of counterfeit purchase, not only in future tests of LSC, but also of other criminological theories. Also, attempts should be made to increase

---

[126] At the time of the conclusion of the study the site is inoperative, and cannot be accessed, as it redirects to the website of the State Office for Invention and trademarks (OSIM).

response rate using various techniques discussed in the previous section, and the effects of nonresponse on both the descriptive and the analytic statistics should be evaluated.

More specific recommendations deal with data collection and measurements. In this respect, self-reports could be combined with different measures of the same variables (e.g. observational measures) which can be used not only to strengthen the design by addressing some limitations of both types of data (Bachman & Schutt, 2011), but also to validate self-reports, which (alongside means such as 'lie scales') are best practice in criminological research (Hagan, 2013). Concerning measurements employed by future research on the topic of volitional purchase of counterfeit goods, there is a clear need of further adaptation to the topic, as well as refinement of the measures employed within this study to assess key concepts of SLT and LSC. In this endeavor, future research can build on the present study by further assessing the validity and reliability of the measures devised for this dissertation. Likewise, future research should consider employing more adequate measures for the measurement and assessment of the influence of culture on volitional consumption, but also attempt to integrate the degree of deceptiveness in the assessment (although how this could be done is unclear at this stage).

Finally, future research should examine the effect of the interaction between opportunity and self-control on counterfeit purchase, as well as the interactive or mediating relationship between social learning, low self-control, and volitional purchase of counterfeit goods.

APPENDICES

Research Participant Information and Consent Form

As part of the School of Criminal Justice at Michigan State University we are conducting a research study in order to understand the purchasing behavior of Romanian college students and further the understanding of the consumption of counterfeit goods. Michigan State University is a nonpartisan, nonprofit academic institution that conducts independent, objective research and analysis.

We are asking you to participate in an electronic survey with regards to your personal purchasing behavior and your friends and family's purchasing behavior with regards to counterfeit products. Your participation in this survey is completely voluntary. There is no penalty for declining to participate. Also, if at any point you feel uncomfortable with a question, you can skip that question or you may withdraw from the study altogether. Be advised that, if you decide to quit the survey at any time before you have finished the questionnaire your answers will NOT be recorded.

However, we strongly encourage your participation, as responses from you are critical in providing concrete and valuable information for assessing consumer behavior.

To ensure that your responses can be represented in our analysis, we request that you complete the survey within one month of receipt. The survey is completely anonymous, so please do not identify your name anywhere. Any potentially identifiable information will be presented in summary form and will not be portrayed to identify an individual person in any way. Data collected as part of this study will be used only for research purposes. This research has been reviewed by Michigan State University's Institutional Review Board, which is responsible for ensuring the protection of human subjects in the University's research studies.

By filling out the survey, you are consenting to participate in this study.

If you have any questions about the survey or study, please feel free to contact the Principal Investigator, Dr. Jeremy Wilson at 517-353-9474 or jwilson@msu.edu; or the Study Coordinator, Zoltán Levente Fejes, at 0758-615-470 or fejeszol@msu.edu.

The results of this project will be available after 8/31/2016. If you would like a copy of the final report, please contact the Study Coordinator.

Thank you for considering participation in this study!

Table A. 1. Variables excluded from analysis (n = 615)[127]

Concept	Variable name	Variable type	Reason for exclusion	% Missing
Counterfeit purchase frequency in past year	CFbuy_freq	Likert scale	Too many missing values	80.4
Counterfeit purchase amount in past year	CFbuy_#	Continuous	Too many missing values	58.5
Level of risk consumer is willing to take when acquiring counterfeits indicated by location of purchases in the past year.	CFbuy_loc	Likert scale	Too many missing values	60.8
Effort put forth in seeking out counterfeit goods in the past year	CFbuy_loc_visit	Likert scale	Too many missing values	60.5

[127] Decisions on exclusion of variables were made based on the results of missing value analyses which were conducted on the full dataset (n=615).

This is a reproduction of the online questionnaire administered through the SurveyMonkey online service.

THE QUESTIONS IN THIS SECTION REFER TO YOUR PURCHASING BEHAVIOR IN THE PAST 12 MONTHS (1 YEAR), EXCEPT WHERE NOTED OTHERWISE.

1. **Please indicate how many times in the past 12 months you have knowingly purchased the following items:**
   (Please check the box on the right that best describes your situation)

	Never	1 to 2 times	3 to 5 times	6 to 9 times	10 or more times
a) Counterfeit apparel (including accessories)	☐	☐	☐	☐	☐
b) Counterfeit perfumes	☐	☐	☐	☐	☐
c) Counterfeit electronics	☐	☐	☐	☐	☐

2. **Please indicate how frequently you have knowingly purchased the following items in the past 12 months:**
   (Please check the box on the right that best describes your situation)

	Once a month	2 times a month	3 to 5 times a month	6 to 9 times a month	10 or more times a month
a) Counterfeit apparel (including accessories)	☐	☐	☐	☐	☐
b) Counterfeit perfumes	☐	☐	☐	☐	☐
c) Counterfeit electronics	☐	☐	☐	☐	☐

3. **Please indicate the approximate amount of counterfeit items you have knowingly purchased in the past 12 months:**
   (Please enter the number in the box to the right of each of the 3 categories listed below.)

    a)   Counterfeit apparel (including accessories)   _____

    b)   Counterfeit perfumes   _____

c)   Counterfeit electronics   _____

4. Please indicate how many times in the past 12 months you have knowingly purchased a counterfeit item from:
(Please check the box on the right that best describes your situation.)

		Never	1 to 2 times	3 to 5 times	6 to 9 times	10 or more times
a)	A legitimate brick and mortar vendor (either boutique or mall)	☐	☐	☐	☐	☐
b)	A market (i.e. vendors in an organized and authorized setting)	☐	☐	☐	☐	☐
c)	A flea market	☐	☐	☐	☐	☐
d)	A street vendor (i.e. a mobile or stationary street merchant that has authorization)	☐	☐	☐	☐	☐
e)	An individual	☐	☐	☐	☐	☐

5. Please indicate how many times in the past 12 months you have purposefully traveled specifically with the intent to purchase at least one counterfeit item (apparel, including accessories; perfumes; electronics) to the following locations:
(Please check the box on the right that best describes your situation.)

		Never	1 to 2 times	3 to 5 times	6 to 9 times	10 or more times
a)	Sale outlets located in Cluj-Napoca	☐	☐	☐	☐	☐
b)	Sale outlets located outside the limits of the city of Cluj-Napoca	☐	☐	☐	☐	☐
c)	Sale outlets located in the following counties: Sălaj, Bihor, Alba, Mureş, Bistriţa-Năsăud, Maramureş	☐	☐	☐	☐	☐
d)	Sale outlets located in other counties than those enumerated at point c	☐	☐	☐	☐	☐
e)	Sale outlets located in Hungary, Ukraine, Moldova, Bulgaria or Serbia.	☐	☐	☐	☐	☐

6. **Please report the approximate number of locations you know about where you can easily purchase counterfeit products in:**
   (Please enter the approximate numbers in the space below for each location category)

a)	Cluj-Napoca	_____
b)	Cluj-county	_____
c)	Sălaj, Bihor, Alba, Mureş, Bistriţa-Năsăud, Maramureş counties	_____
d)	Romania	_____
e)	Hungary, Ukraine, Moldova, Bulgaria and Serbia	_____

7. **Please indicate when was the FIRST TIME you have knowingly purchased a counterfeit item from the following categories of products: apparel, including accessories; perfumes; or electronics.**
   (Please enter the month and the year in the space below.)

   _____

8. **Please indicate when was the LAST TIME you have knowingly purchased a counterfeit item from the following categories of products: apparel, including accessories; perfumes; or electronics.**
   (Please enter the month and the year in the space below.)

   _____

9. **GENERALLY do you have knowingly purchase counterfeit products for yourself, or for someone else (e.g. as a gift)?**
   (Please check the box on the right that best describes your situation.)

a)	As a gift for a friend	☐
b)	As a gift for a family member	☐
c)	For someone else	☐
d)	For myself	☐

10. This question reffers to your behavior in GENERAL. Please indicate the reason why you knowingly purchase counterfeit products:
(Please check the box on the right that best describes your situation.)

a)	Lower price than the original (I can't afford to purchase the originals)	☐
b)	I am not willing to pay the price they charge for genuine products (I can afford to buy genuine products, but do not want to pay the asking price.)	☐
c)	Counterfeits are a good substitute of the original item for a lover cost	☐
d)	I purchase counterfeits because my friends also purchase counterfeits	☐
e)	Original items are not available for purchase	☐

11. Please indicate the extent to which you agree with the following statements:
(Please check the box on the right that best describes your situation)

		Strongly agree	Agree	Disagree	Strongly disagree
a)	Generally speaking, buying counterfeit goods is a better choice than buying genuine products	☐	☐	☐	☐
b)	Considering price, I prefer counterfeit goods	☐	☐	☐	☐
c)	Buying counterfeit goods generally benefits the consumer	☐	☐	☐	☐
d)	There's nothing wrong with purchasing counterfeit goods	☐	☐	☐	☐

12. Please indicate the extent to which you agree with the following statements:
(Please check the box on the right that best describes your situation.)

		Strongly agree	Agree	Disagree	Strongly disagree
a)	Buying counterfeit products is unethical.	☐	☐	☐	☐
b)	People buy counterfeit products because of high prices for genuine brands.	☐	☐	☐	☐
c)	Buying counterfeit products is a smarter way to own well-known brands.	☐	☐	☐	☐
d)	Buying a counterfeit product is morally wrong.	☐	☐	☐	☐
e)	The legal consequence of buying counterfeit products is minimal.	☐	☐	☐	☐
f)	Counterfeit products offer good value for money	☐	☐	☐	☐

13. Please indicate the extent to which you agree with the following statements:
(Please check the box on the right that best describes your situation.)

		Strongly agree	Agree	Disagree	Strongly disagree
a)	I feel ashamed when I purchase counterfeit goods	☐	☐	☐	☐
b)	I would feel ashamed if my peers discovered that I have purchased a counterfeit item	☐	☐	☐	☐
c)	I would feel ashamed if my family members discovered that I have purchased a counterfeit item	☐	☐	☐	☐

THE QUESTIONS IN THE FOLLOWING SECTION REFER TO BOTH YOUR BEHAVIOR AND THE BEHAVIOR OF YOUR PEERS AND FAMILY.

14. Please indicate how many of your family members have engaged in counterfeit purchasing behavior in the past 12 months:
(Please check the box on the right that best describes your situation)

		None	Very few	About half	More than half	All of them
a)	Have purchased at least one counterfeit product.	☐	☐	☐	☐	☐
b)	Have worn or used at least one counterfeit product.	☐	☐	☐	☐	☐

15. Please indicate how many of your peers have engaged in counterfeit purchasing behavior in the past 12 months:
(Please check the box on the right that best describes your situation)

		None	Very few	About half	More than half	All of them
a)	Have purchased at least one counterfeit product.	☐	☐	☐	☐	☐
b)	Have worn or used at least one counterfeit product.	☐	☐	☐	☐	☐

16. Please indicate the extent to which you agree with the following statements:
(Please check the box on the right that best describes your situation)

		Strongly agree	Agree	Disagree	Strongly disagree
a)	Purchasing counterfeit goods is wrong	☐	☐	☐	☐
b)	Purchasing counterfeit goods harms other individuals	☐	☐	☐	☐
c)	Purchasing counterfeit goods harms rightful IP owners	☐	☐	☐	☐
d)	Purchasing counterfeit goods is damaging to society in general	☐	☐	☐	☐
e)	The purchasing of counterfeit goods should be criminalized	☐	☐	☐	☐

17. Please indicate the extent to which you agree with the following statements:
   (Please check the box on the right that best describes your situation)

		Strongly agree	Agree	Disagree	Strongly disagree
a)	People who buy counterfeit goods are actually helping the local economy	☐	☐	☐	☐
b)	If counterfeit items are harmful (to society, to the economy; IP owners and other individuals) then it is the responsibility of the authorities to get them off the market	☐	☐	☐	☐
c)	Unfair practices by manufacturers force people to buy cheaper alternatives to their overpriced original products	☐	☐	☐	☐
d)	Those who say that purchasing counterfeit goods is wrong are just envious of others' ability to be savvy shoppers	☐	☐	☐	☐
e)	I see nothing wrong in buying counterfeit goods as a means of fitting in with my friends	☐	☐	☐	☐

18. Please indicate the extent to which you agree with the following statements:
(Please check the box on the right that best describes your situation)

		Strongly agree	Agree	Disagree	Strongly disagree
a)	I have been influenced to purchase counterfeits by the behavior of my parent(s) purchasing such products	☐	☐	☐	☐
b)	I have been influenced to purchase counterfeits by my friend's behavior of purchasing such products	☐	☐	☐	☐
c)	I have been influenced to purchase counterfeits by the behavior of purchasing such products of people I admire	☐	☐	☐	☐
d)	I have been influenced to purchase counterfeits by others' (i.e. strangers) behavior of purchasing such products	☐	☐	☐	☐
e)	I have been influenced to purchase counterfeits by the behavior of purchasing such products portrayed in the media	☐	☐	☐	☐

19. Please indicate the extent to which you agree with the following statements:
(Please check the box on the right that best describes your situation)

		Strongly agree	Agree	Disagree	Strongly disagree
a)	Most of my family members consider that it is OK for me to buy counterfeit products	☐	☐	☐	☐
b)	Most of my friends consider that it is OK for me to buy counterfeit products	☐	☐	☐	☐

20. Please indicate the extent to which you agree with the following statements:
(Please check the box on the right that best describes your situation)

		Strongly agree	Agree	Disagree	Strongly disagree
a)	Most of my family members reprimand me for buying counterfeit goods	☐	☐	☐	☐
b)	Most of my family members make negative remarks If I buy/wear/use counterfeit goods	☐	☐	☐	☐
c)	Most of my friends reprimand me for buying counterfeit goods	☐	☐	☐	☐
d)	Most of my friends make negative remarks if I buy/wear/use counterfeit goods	☐	☐	☐	☐

21. Please indicate how many times have family members:
(Please check the box on the right that best describes your situation)

		Never	1 to 2 times	3 to 5 times	6 to 9 times	10 or more times
a)	Praised you for buying counterfeit products	☐	☐	☐	☐	☐
b)	Encouraged your behavior of buying counterfeit products	☐	☐	☐	☐	☐

23. Please indicate how many times have your peers:
(Please check the box on the right that best describes your situation)

		Never	1 to 2 times	3 to 5 times	6 to 9 times	10 or more times
a)	Praised you for buying counterfeit products	☐	☐	☐	☐	☐
b)	Encouraged your behavior of buying counterfeit products	☐	☐	☐	☐	☐

24. Please indicate the extent to which you agree with the following statements:
(Please check the box on the right that best describes your situation)

		Strongly agree	Agree	Disagree	Strongly disagree
a)	I often act on the spur of the moment without stopping to think.	☐	☐	☐	☐
b)	I often do whatever brings me pleasure here and now, even at the cost of some distant goal.	☐	☐	☐	☐
c)	I'm more concerned with what happens to me in the short run than in the long run.	☐	☐	☐	☐
d)	I don't devote much thought and effort to preparing for the future.	☐	☐	☐	☐

25. Please indicate the extent to which you agree with the following statements:
(Please check the box on the right that best describes your situation)

		Strongly agree	Agree	Disagree	Strongly disagree
a)	I frequently try to avoid projects that I know will be difficult.	☐	☐	☐	☐
b)	I dislike really hard tasks that stretch my ability to the limit.	☐	☐	☐	☐
c)	When things get complicated, I tend to quit or withdraw.	☐	☐	☐	☐
d)	The things in life that are easiest to do bring me the most pleasure.	☐	☐	☐	☐

26. Please indicate the extent to which you agree with the following statements:
(Please check the box on the right that best describes your situation)

		Strongly agree	Agree	Disagree	Strongly disagree
a)	I like to test myself every now and then by doing something a little risky.	☐	☐	☐	☐
b)	Sometimes I will take a risk just for the fun of it.	☐	☐	☐	☐
c)	I sometimes find it exciting to do things for which I might get into trouble.	☐	☐	☐	☐
d)	Excitement and adventure are more important to me than security.	☐	☐	☐	☐

27. Please indicate the extent to which you agree with the following statements:
(Please check the box on the right that best describes your situation)

		Strongly agree	Agree	Disagree	Strongly disagree
a)	If I had a choice, I would almost always rather do something physical than something mental.	☐	☐	☐	☐
b)	I almost always feel better when I am on the move than when I am sitting and thinking.	☐	☐	☐	☐
c)	I like to get out and do things more than I like to read or contemplate ideas.	☐	☐	☐	☐
d)	I seem to have more energy and a greater need for activity than most other people my age.	☐	☐	☐	☐

28. Please indicate the extent to which you agree with the following statements:
(Please check the box on the right that best describes your situation)

		Strongly agree	Agree	Disagree	Strongly disagree
a)	If things I do upset people, it's their problem, not mine.	☐	☐	☐	☐
b)	I try to look out for myself first, even if it means making things difficult for other people.	☐	☐	☐	☐
c)	I will try to get things I want even when I know it's causing problems for other people.	☐	☐	☐	☐
d)	I'm not very sympathetic to other people when they are having problems.	☐	☐	☐	☐

29. Please indicate the extent to which you agree with the following statements:
(Please check the box on the right that best describes your situation)

		Strongly agree	Agree	Disagree	Strongly disagree
e)	I lose my temper easily.	☐	☐	☐	☐
f)	Often, when I am angry at people I feel more like hurting them then talking to them about why I am angry.	☐	☐	☐	☐
g)	When I am really angry, other people better stay away from me.	☐	☐	☐	☐
h)	When I have a serious disagreement with someone, it's usually hard for me to talk calmly about it without getting upset.	☐	☐	☐	☐

THE QUESTIONS IN THE FOLLOWING SECTION ARE ABOUT IMPORTANT DEMOGRAPHIC INFORMATION. PLEASE ANSWER THEM AS TRUTHFULLY AND ACCURATELY AS YOU CAN.

30. What is your gender?
(*Please check the box on the right of your answer.*)

a) Male ☐

b) Female ☐

31. What is your ethnicity?
(*Please check the box on the right of your answer.*)

a) Romanian ☐

b) Hungarian ☐

c) Rroma ☐

d) Other (please specify _____

32. What is your age?
(*Please enter the number of years in the space below)*

_____

33. What is your current level of education?
(*Please check the box on the right that best describes your situation*)

a) Undergraduate ☐

b) Graduate ☐

34. Please indicate the faculty at which you are currently studying at Babeş-Bolyai University:
(*Please enter the information in the space below)*
_____

35. Where have you finished high school?

(Please enter the information in the space below)

Locality:_____

County :_____

Country:_____

36. Please indicate the amount of income/month that you have available to spend on items that do not represent the usual necessities (i.e. Items other than food, lodging, educational expenses, and other vital expenses):
(Please check the box on the right that best describes your situation)

a)	Less then100 RON	☐
b)	Between 101 and 300 RON	☐
c)	Between 301 and 500 RON	☐
d)	Over 501 RON	☐

Thank you for taking the time to complete this questionnaire!

APPENDIX D
Technical appendix

Re-evaluating results from the final regression model/final data

Bootstrap and pairwise comparison

As briefly mentioned in Chapter 5, in order to further validate the results, the final

logistic regression model was re-estimated using bootstrap. In addition, the final data was also

re-estimated using pairwise comparisons. These were performed on complete data (n=281), after

significant outliers were removed.

Bootstrapping, as a general tool for assessing statistical accuracy (Hassie et al., 2008, p.

223) can be used "to reveal the relevance of variables in regression models, especially (but not

only) in the context of missing data" (Schomaker & Heumann, 2014, p. 768). Both techniques

are fit for deriving confidence bands and critical values for test statistics, but[128] can be used to

remove biases in estimated coefficients as well (Brownstone & Valletta, 2001, p. 130).

Bootstrapping has the status of a robust method of analysis, which allows greater

confidence in the results. Accordingly, the results from the logistic regression analysis using

1000 bootstrap samples were compared to results from the final logistic regression model. As it

is visible in Table A. 2., the same four independent/control variables made unique, statistically

significant contributions to the model as before (deviant peer association, deviant family

association, attitude towards counterfeit goods, and opportunity). In terms of bias, most of the

---

[128] It is important to mention that the bootstrap and MI techniques may also be combined. In fact, several authors
have discussed at length how this may be achieved, including the benefits and drawbacks of each combination
(Comulada, 2015; Di Ciaccio, 2011; Hastie et al., 2008; Schomaker & Heumann, 2014; Shao & Sitter, 1996).
Despite the fact that different possible approaches have been proposed (e.g.: multiply-impute-then-boot – Shao &
Sitter, 1996; bootstrapping the data including missing values, multiply imputing each bootstrap sample, and using
the MI estimates in each bootstrap sample as a basis to construct nonparametric bootstrap percentile confidence
intervals – Schomaker & Heumann, 2016, p. 17), the current statistical literature is still not clear on how to combine
bootstrap with multiple imputation inference (Schomaker & Heumann, 2016, p.17). In addition, computational
limitations of SPSS (even STATA requires additional programming for the ability to bootstrap – Comulada, 2015, p.
2) prevent bootstrapping from being complete on the imputed data at this point.

values obtain are marginal with neither of the values above 1 or below -1. Nevertheless, these results may suggest that some bias may be present in the data in terms of gender, ethnicity, education, and attitude towards counterfeit goods bias may be present in the data. Accordingly, final results should be viewed in the light of these results.

Table A. 2. Bootstrapping (n=281)

	B	Bias	S.E.	Sig.	95% C.I. for EXP(B)	
					Lower	Upper
Deviant peer association	.349	.039	.163	.005	.101	.752
Deviant family association	.273	.053	.132	.012	.085	.620
Positive definitions	-.052	.004	.167	.670	-.386	.276
Neutralizing definitions	-.157	-.057	.246	.454	-.765	.222
Imitation	-.129	-.003	.153	.337	-.449	.169
Differential reinforcement: Punishment	.019	.000	.103	.833	-.192	.213
Low self-control	-.030	-.003	.035	.291	-.110	.030
Attitude toward counterfeiting	-.045	-.008	.281	.832	-.629	.469
Attitude towards counterfeits	.647	.094	.197	.001	.413	1.200
Social desirability	-.104	-.024	.169	.461	-.486	.195
Opportunity	.401	.076	.121	.001	.271	.763
Age	.060	.007	.041	.061	-.007	.155
Education	.388	.104	.661	.503	-.789	1.850
Historical region (dummy)	.161	.043	.601	.752	-1.018	1.409
Ethnicity (dummy)	-.778	-.132	.551	.091	-1.982	.142
Gender	-.669	-.097	.530	.126	-1.829	.220
Disposable income (dummy)	.129	.021	.656	.821	-1.069	1.448

In addition pairwise comparisons were also conducted. Aimed at determining whether mean differences between the two groups of interest (purchase/no-purchase) are "larger than expected by chance or not" (Tabachnick & Fidell, 2013, p. 200), the results of the analysis revealed that

the difference in low self-control is statistically significant: t (281) = 3.379; p = .001 (two-tailed). However, the magnitude of the mean difference between non-purchasers (M = 70.631, SD = 8.022) and purchasers (M = 67.343, SD = 8.196) was small[129] (r = 0.006). Similarly, as visible in Table A. 3., statistically significant difference in attitude towards counterfeit goods, attitude toward counterfeiting and counterfeit goods, differential peer and family association, positive and neutralizing definitions, imitation, differential reinforcement punishment, social desirability, and opportunity, but not in the sociodemographic variables. These results suggest that the differences between the two groups on the main predictors are likely not due to chance, providing additional support for the results of the analyses discussed in the body of the dissertation.

Besides providing more reliable results, these analyses allow a greater confidence with regards to the accuracy of the findings from the logistic regression analysis, but also with regards to the fact that the observed difference is not due to chance alone.

---

[129] .01 = small; .06 = moderate; .14 = large (Pallant, 2010, p. 236)

Table A. 3. Pairwise comparison (n=281)

	Purchase		No purchase		Mean difference		
	M	**SD**	**M**	**SD**	**t(281)**	**Sig.**	**r**
Deviant peer association	7.807	2.587	5.445	1.757	-9.010*	.000	0.473
Deviant family association	7.318	2.969	4.589	1.764	9.449*	.000	0.491
Positive definitions	6.911	1.941	5.945	1.925	-4.184	.000	0.242
Neutralizing definitions	4.111	1.182	3.643	1.124	-3.394	.001	0.198
Imitation	5.592	1.928	4.527	1.606	-5.043	.000	0.288
Differential reinforcement: Punishment	7.9925	2.617	8.726	2.870	-2.228	.026	0.131
Low self-control	67.343	8.196	70.631	8.022	3.3798	.001	0.006
Attitude toward counterfeiting	11.429	2.575	8.452	1.815	-4.998	.000	0.285
Attitude towards counterfeits	8.452	1.815	11.429	2.575	-11.265*	.000	0.557
Social desirability	6.481	2.245	7.917	1.763	5.986*	.000	0.336
Opportunity	7.170	9.738	1.890	0.734	-6.532*	.000	0.363
Age	23.970	7.714	23.280	6.296	-.823	.411	0.049
Education	0.200	0.401	0.191	0.395	-.173	.862	0.010
Historical region (dummy)	0.792	0.406	0.869	0.337	1.737*	.083	0.103
Ethnicity (dummy)	0.851	0.356	0.821	0.383	-.675	.499	0.040
Gender	0.755	0.431	0.678	0.468	-1.437*	.151	0.085
Disposable income (dummy)	0.177	0.383	0.226	0.419	1.003*	.316	0.059

*Equal variances not assumed. df≠281.

Blocked regression

In order to assess how much predictive power was added to the model by the addition of another variable or set of variables, and thus compare social learning, low self-control, and control variables blocked regression analyses were conducted. Variables were entered in consecutive blocks and the improvement produced by each new set of variables was assessed.

The firs blocked regression analysis examined the role of low self-control in predicting group membership (purchase/no purchase) independently of SLT variables and controls. Accordingly, SLT variables and controls were entered in block 1, and low self-control in block 2. The results of this analysis revealed that the inclusion of low self-control in the model increased the pseudo R^2 values only marginally: 50.1% (Cox and Snell R square) and 67.9% (Nagelkerke R square), versus 50.9% (Cox and Snell R square) and 67.9% (Nagelkerke R square). Therefore, while the full model displayed a greater explanatory power than the reduced model, the increment obtained by adding low self-control was negligible. In addition, the fact that the full model was not statistically significant ($\chi^2 = 1.198$, $p = .274$) indicated that low self-control did not have an effect above and beyond the effects of SLT and the controls. This result provides additional support to the findings from the original binary logistic regression model (n=281) which suggested that the SLT and some of the control variables have a more significant explanatory power with respect to volitional purchase of counterfeit goods than low self-control, pointing to the stronger explanatory power of social learning in the context of volitional purchase of counterfeit goods.

In addition, the increase in predictive power obtained by adding the control variables and low self-control to a reduced model containing the SLT variables only was assessed in a similar fashion. The results of the blocked regression indicated that the inclusion of these variables

provided a significant increase in the explanatory power compared to the reduced model: from

45.2% (Cox and Snell R square) and 60.3% (Nagelkerke R square), to 50.7% (Cox and Snell R

square) and 67.7% (Nagelkerke R square). This suggests a significant contribution to the

explanatory power provided by the control variables included in the full model.

These results (see Table A. 4. for a complete overview), combined with the fact that the

same four variables made unique, statistically significant contributions to the models (deviant

peer association, deviant family association, attitude towards counterfeit goods, and opportunity)

support the findings from the binary logistic regression model performed on complete cases only

(n=281)

TABLE A. 4. Blocked regression (n=281)

	1(Partial)			2(Partial)			3(Full)		
	B	**SE**	**Exp(B)**	**B**	**SE**	**Exp(B)**	**B**	**SE**	**Exp(B)**
Deviant peer association	.367	.132	1.443**				.349	.132	1.418**
Deviant family association	.267	.110	1.306**				.273	.111	1.314**
Positive definitions	-.041	.136	.960				-.051	.137	.950
Neutralizing definitions	-.136	.202	.873				-.157	.203	.854
Imitation	-.111	.121	.895				-.129	.122	.879
Differential reinforcement: Punishment	.023	.076	1.024				.019	.076	1.019
Low self-control				-.034	.024	.967	-.029	.027	.971
Attitude toward counterfeiting	-.043	.184	.958	-.134	.154	.875	-.045	.186	.956
Attitude towards counterfeits	.659	.136	1.933**	.651	.118	1.917**	.647	.134	1.909**
Social desirability	-.092	.120	.912	-.146	.105	.864	-.104	.121	.901
Opportunity	.392	.107	1.481**	.446	.100	1.562**	.401	.108	1.494**
Age	.056	.033	1.058	.043	.029	1.044	.060	.033	1.062
Education	.361	.494	1.435	.584	.457	1.793	.388	.502	1.474
Historical region (dummy)	.160	.472	1.174	.251	.432	1.286	.161	.474	1.175
Ethnicity (dummy)	-.804	.580	.448	-.688	.515	.502	-.778	.590	.460
Gender	-.627	.444	.534	-.181	.386	.834	-.668	.448	.512
Disposable income (dummy)	.140	.536	1.150	.336	.475	.480	.129	.533	1.138

*p<0.05; **p<0.01

Table A.4. (cont'd)

Constant	-10.884	-5.252	-8.362
-2LL	187.431	216.988	186.234
Chi-square	1.198	166.577**	197.332**
Cox and Snell R square	.509	.452	.510
Nagelkerke R square	.679	.603	.680

*p<0.05; **p<0.01

The typical method to test for non-response bias is to compare responses of those who have completed the questionnaire (constituting a sample of respondents) to those who have started but have failed to complete (constituting a sample of non-respondents that is assumed to be representative of that group). As mentioned in Chapter 4, the data collection effort generated 623 respondents, but only 612 had recorded responses. These were suitable to conduct the present analysis.

Since individual non-respondents broke off from completing the questionnaire at different points, the difference in responses between respondents and non-respondents can be assessed only for a small number of variables that both groups have completed. For this reason the variable that was completed by most individuals was chosen for this test: counterfeit purchase in the past 12 months. The results of the independent-samples t-test (as visible in Table A. 5.) revealed a statistically significant difference between the means of the two groups.

Table A. 5. Assessing non-response bias (n=612)

	Respondent		Non-respondent		Mean difference		
	M	**SD**	**M**	**SD**	*t*(544.852)	**Sig.**	*r*
Counterfeit purchase	0.417	0.493	0.843	0.364	-12.064*	.000**	0.459

*Equal variances not assumed. **Two-tailed.

The higher mean of the non-respondent group on the purchase variable suggests that, compared to the respondents, these individuals are consumers of counterfeit goods, which raises questions about the accuracy of the results. Although this does not invalidate the findings of this study, it does point to its limitations and serves as a caveat in interpreting the results. It also underscores the importance of increasing response rate in online surveys addressing counterfeit purchase.

REFERENCES

REFERENCES

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179-211.

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior* (Vol. Paperback). Englewood Cliffs, N.J: Prentice-Hall.

Akers, R. L. (1990). Rational Choice, Deterrence, and Social Learning Theory in Criminology: The Path Not Taken. *Journal of Criminal Law and Criminology* (81), 653-676.

Akers, R. L. (1998). *Social learning and social structure: A general theory of crime and deviance*. Boston: Northeastern University Press.

Akers, R. L. (2000). *Criminological Theories. Introduction, Evaluation, and Application* (3rd ed.): Roxbury Publishing Company.

Akers, R. L. (2011). *Social learning and social structure: A general theory of crime and deviance*. Transaction Publishers.

Akers, R. L., & Jensen, G. F. (2006). The Empirical Status of Social Learning Theory of Crime & Deviance: The Past, Present and Future. In J. W. Francis T. Cullen, Kristie Blevins (Ed.), *Taking Stock: The Status of Criminological Theory*. New Brunswick, New Jersey: Transaction Publishers.

Akers, R. L., Krohn, M. D., Lanza-Kaduce, L., & Radosevich, M. (1979). Social Learning and Deviant Behavior: A Specific Test of a General Theory. *American Sociological Review, 44*(4), 636-655.

Akers, R. L., & Lee, G. (1996). A longitudinal test of social learning theory: Adolescent smoking. *Journal of Drug issues* (26), 317-343.

Albers-Miller, N. D. (1999). Consumer misbehavior: why people buy illicit goods. *Journal of Consumer Marketing, 16*(3), 273-287.

Allison, P. D. (2014). *Measures of Fit for Logistic Regression*. Paper presented at the SAS Global Forum 2014. http://statisticalhorizons.com/wpcontent/uploads/GOFFor LogisticRegression-Paper.pdf.

Anderson, A. B., Basilevsky, A., & Hum, D. P. J. (2000). Missing Data: A Review of the Literature. In P. H. Rossi, J. D. Wright & A. B. Anderson (Eds.), *Handbook of survey research*. San Diego [etc.]: Academic Press.

Andrews, D. A., & Bonta, J. (1998). *The psychology of criminal conduct* (2nd ed.). Cincinnati: Anderson.

Ang, S. H., Cheng, P. S., Lim, E. A. C., & Tambyah, S. K. (2001). Spot the difference: consumer responses towards counterfeits. *Journal of Consumer Marketing, 18*(3), 219-235.

APM. (2011). Raport. Implementarea studiului de monitorizare a inserției pe piața muncii a absolvenților din învățământul superior (promoțiile 2006 și 2010): Absolvenții și Piața Muncii.

Arneklev, B., Grasmick, H., Tittle, C., & Bursik, R., Jr. (1993). Low self-control and imprudent behavior. *Journal of Quantitative Criminology, 9*(3), 225-247.

Atsmon, Y., Dixit, V., & Wu, C. (2011). Tapping China's luxury-goods market. Retrieved from http://www.mckinsey.com/insights/marketing_sales/tapping_chinas_luxury-goods_market.

Bachman, R., & Paternoster, R. (2004). *Statistics for criminology and criminal justice* (Vol. 2nd). Boston: McGraw-Hill.

Bachman, R. D., & Schutt, R. K. (2011). *Fundamentals of Research in Criminology and Criminal Justice.* (3 ed.): SAGE Publications.

Bala, M. M., Strzeszynski, L., & Cahill, K. (2008). Mass media interventions for smoking cessation in adults. *The Cochrane Library*.

Balfour, F. (2005, February 7). Fakes! *BusinessWeek, 3919*.

Bădescu, G., & Sum, P. (2005). Historical Legacies, Social Capital and Civil Society: Comparing Romania on a Regional Level. *Europe-Asia Studies, 57*(1), 117-133. doi: 10.1080/0966813052000314138.

Barlett, J. E., Kotrlik, J. W., & Higgins, C. C. (2001). Organizational research: Determining appropriate sample size in survey research. *Information Technology, Learning, and Performance Journal, 19*(1), 43-50.

BASCAP. (2009). Research Report on Consumer Attitudes and Perceptions on Counterfeiting and Piracy. Paris, France: Business Action to Stop Counterfeiting & Piracy.

BASCAP. (2011). Estimating the global economic and social impacts of counterfeiting and piracy. London, UK: Business Action to Stop Counterfeiting & Piracy.

Bates, N. C. (2005). Deadly Discounts: How Reimportation Jeopardizes the Safety of the U.S.Pharmaceutical Drug Supply under the Federal Trade Commission Amendment. *bepress Legal Series*(paper 833).

Banca Națională a României (2016). Curs valutar mediu lunar - Curs mediu BNR. Retrieved from http://www.curs-valutar-bnr.ro/curs-valutar-mediu-lunar.

Benson, M. L., & Moore, E. (1992). Are White-Collar and Common Offenders the Same? An Empirical and Theoretical Critique of a Recently Proposed General Theory of Crime. *Journal of Research in Crime and Delinquency, 29*(3), 251-272.

Bentler, P. M., & Speckart, G. (1979). Models of attitude–behavior relations. *Psychological Review, 86*(5), 452-464.

Berland, E. (2013). The European citizens and intellectual property: perception, awareness and behaviour. Alicante, Spain: Office for Harmonization in the Internal Market.

Berman, B. (2008). Strategies to detect and reduce counterfeiting activity. *Business Horizons, 51*(3), 191-199.

Bethlehem, J., & Biffignandi, S. (2011). *Handbook of Web Surveys* (Vol. 1). Hoboken: Wiley.

Bian, X., & Veloutsou, C. (2007). Consumers' attitudes regarding non-deceptive counterfeit brands in the UK and China. *Journal of Brand Management, 14*(3), 211.

Bloch, P. H., Bush, R. F., & Campbell, L. (1993). Consumer 'Accomplices' in Product Counterfeiting: A Demand Side Investigation. *Journal of Consumer Marketing, 10*(4), 27-36.

Bohrnstedt, G. W. (2000). Measurement. In P. H. Rossi, J. D. Wright & A. B. Anderson (Eds.), *Handbook of Survey Research*. San Diego [etc.]: Academic Press.

Boia, L. (2001). *History and myth in Romanian consciousness*. Budapest: Central European University Press.

Boia, L. (2007). *Romania: Bordeland of Europe*. London: Reaktion Books Ltd.

Bolin, A. U. (2004). Self-Control, Perceived Opportunity, and Attitudes as Predictors of Academic Dishonesty. *The Journal of Psychology*, 138(2), 101-114.

Bosworth, D. (2006). *Counterfeiting and Piracy: The State of the Art*. Paper presented at the Intellectual Property in the New Millennium Seminar, Oxford.

Bradburn, N. M., Sudman, S., & Wansink, B. (2004). *Asking Questions: The Definitive Guide to Questionaire Design: For Market Research, Political Polls, and Social and Health Questionnaires*, Revised Edition. San-Francisco: Jossey-Bass.

Brame, R., & Paternoster, R. (2003). Missing Data Problems in Criminological Research: Two Case Studies: 1. *Journal of Quantitative Criminology*, 19(1), 55.

Brame, R., Turner, M. G., & Paternoster, R. (2010). Missing Data Problems in Criminological Research. In R. A. Piquero & D. Weisburd (Eds.), *Handbook of Quantitative Criminology* (pp. 273-288). New York, NY: Springer New York.

Burruss, G. W., Bossler, A. M., & Holt, T. J. (2013). Assessing the Mediation of a Fuller Social Learning Model on Low Self-Control's Influence on Software Piracy. *Crime & Delinquency, 59*(8), 1157-1184.

Burton, V. S., Cullen, F. T., Evans, T. D., Alarid, L. F., & Dunaway, R. G. (1998). Gender, Self-Control, and Crime. *Journal of Research in Crime and Delinquency*, 35(2), 123-147.

Buuren, S. v. (2012). *Flexible imputation of missing data*. Boca Raton, FL: CRC Press.

Calcan, G. (2010). The Administrative Unification of the Completed Romania. The Stages of the Administrative Integration of Transylvania, 1918-1925. *Transylvanian Review of Administrative Sciences, 6*(30), 16-29.

Carpenter, J. M., & Edwards, K. E. (2013). U.S. Consumer Attitudes toward Counterfeit Fashion Products. *Journal of Textile and Apparel, Technology and Management*, 8(1).

Cârciumaru, R. (2012). The Genesis of the Medieval State on the Romanian Territory: Moldavia. *Studia Slavica et Balcanica Petropolitana(2)*, 172-188.

Catton, J. (n.d.). Counterfeit Drugs: Why We Should Care And What We Should Do About It. Retrieved from http://iposgoode.ca/wp-content/uploads/2008/10/counterfeit-drugs-jessica-catton.doc.

CBP. (n.d.). U.S. Customs and Border Protection. Retrieved 04.20, 2015, from http://www.cbp.gov/travel/international-visitors/kbyg/prohibited-and-restricted-items.

Cesareo, L. (2015). *Counterfeiting and Piracy: A Comprehensive Literature Review* (Vol. 1st 2016). Cham: Springer International Publishing.

Chakraborty, G., Allred, A. T., & Bristol, T. (1996). Exploring Consumers' Evaluations of Counterfeits: The Roles of Country of Origin and Ethnocentrism. *Advances in Consumer Research, 23*.

Chakraborty, G., Allred, A., Sukhdial, A. S., & Bristol, T. (1997). Use of Negative Cues to Reduce Demand for Counterfeit Products. *Advances in Consumer Research, 24*, 345-349.

Chang, M. K. (1998). Predicting Unethical Behavior: A Comparison of the Theory of Reasoned Action and the Theory of Planned Behavior. *Journal of Business Ethics, 17*(16), 1825-1834.

Chaudhry, P., Cordell, V., & Zimmerman, A. (2005). Modelling Anti-Counterfeiting Strategies in Response to Protecting Intellectual Property Rights in a Global Environment. [Article]. *Marketing Review, 5*(1), 59-72.

Chaudhry, P., & Zimmerman, A. (2009). *The Economics of Counterfeit Trade. Governments, Consumers, Pirates and Intellectual Property Rights*. Berlin Heidelberg: Springer-Verlag.

Cheung, W.-L., & Prendergast, G. (2006). Buyers' perceptions of pirated products in China. *Marketing Intelligence & Planning, 24*(5), 446-462.

CIA – Central Intelligence Agency. (2015). Romania. In The World Factbook. Retrieved from https://www.cia.gov/library/publications/the-world-factbook/geos/ro.html.

CIB – Counterfeiting Intelligence Bureau. (1997). Countering Counterfeiting. A guide to protecting & enforcing intellectual property rights. Counterfeiting Intelligence Bureau. International Chamber of Commerce (ICC).

CNFIS – Consiliul Naţional pentru Finanţarea Învăţământului Superior (2015). Raport public anual –2014. Starea finanţării învăţământului superior şi măsurile de optimizare ce se impun: Consiliul Naţional pentru Finanţarea Învăţământului Superior. Retrieved from http://www.cnfis.ro/wp-content/uploads/2015/07/CNFIS-Raport-public2014_final _20.06.2015.pdf.

Cochran, J. K., Wood, P. B., Sellers, C. S., Wilkerson, W., & Chamlin, M. B. (1998). Academic dishonesty and low self-control: An empirical test of a general theory of crime. *Deviant Behavior*, 19(3), 227-255.

Cook, C., Heath, F., & Thompson, R. L. (2000). A Meta-Analysis of Response Rates in Web- or Internet-Based Surveys. *Educational and Psychological Measurement*, 60(6), 821-836.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (Vol. 2nd). Hillsdale, N.J: L. Erlbaum Associates.

Comulada, W. S. (2015). Model specification and bootstrapping for multiply imputed data: An application to count models for the frequency of alcohol use. *The Stata journal, 15*(3), 833-844.

Cordell, V. V., Wongtada, N., & Kieschnick Jr., R. L. (1996). Counterfeit Purchase Intentions: Role Lawfulness Attitudes and Product Traits as Determinants. *Journal of Business Research,* (35), 41-53.

Cornish, D., & Clarke, R. V. (1986). Introduction. In D. Cornish & R. V. Clarke (Eds.), *The Reasoning Criminal*. New York: Springer-Verlag.

Costello, B. J. (2000). Techniques of neutralization and self-esteem: a critical test of social control and neutralization theory. *Deviant Behavior*, 21(4), 307-329. doi: 10.1080/016396200404113.

Crăciun, M. (2010). Snapshot: Fake Branded Clothing in Post-Socialist Romania. In J. B. Eicher (Ed.), *Berg encyclopedia of world dress and fashion* (Vol. 9, East Europe, Russia and the Caucasus). Oxford: Berg.

Crowne, D. P., & Marlowe, D. (1967). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology*, 24(4), 349-354.

Cullen, F. T., Wright, J., & Blevins, K. (2006). Introduction: Taking Stock of Criminological Theory. In J. W. Francis T. Cullen, Kristie Blevins (Ed.), *The Empirical Status of Social Learning Theory of Crime & Deviance: The Past, Present and Future*. New Brunswick, New Jersey: Transaction Publishers.

Dabija, D. C., Dinu, V., Tăchiciu, L., & Pop, C.-M. (2014). Romanian Consumers' Attitudes towards Counterfeits - An Empirical Study. *Transformations in Business & Economics*, 13(2).

Daniel, J. (2012). *Sampling Essentials: Practical Guidelines for Making Sampling Choices*. Thousand Oaks, CA: SAGE Publications, Inc.

David, D. (2015). *Psihologia Poporului Român. Profilul psihologic al românilor într-o monografie cognitiv-experimentală*. Iași: Polirom.

de Matos, C. A., Ituassu, C. T., & Rossi, C. A. V. (2007). Consumer attitudes toward counterfeits: a review and extension. *Journal of Consumer Marketing, 24*(1), 36 - 47.

Delisi, M., Hochstetler, A., & Murphy, D. S. (2003). Self-control behind bars: A validation study of the Grasmick et al. scale. *Justice Quarterly, 20*(2), 241-263.

de Lucio, J., & Valero, M. (2014). Buying decisions of counterfeit goods and moral judgment. *ESIC Market. Economic & Business Journal*, 45(1).

Diaconu, L. (2014). Regional Economic Disparities In Romania. Comparative Analysis Of The North-East And West Development Regions. *USV annals of economics and public administration*, 14(2), 75-82.

Di Ciaccio, A. (2011). Bootstrap and Nonparametric Predictors to Impute Missing Data. In B. Fichet, D. Piccolo, R. Verde & M. Vichi (Eds.), *Classification and Multivariate Analysis for Complex Data Structures* (pp. 203-210). Berlin, Heidelberg: Springer Berlin Heidelberg.

Dillman, D. A. (2007). *Mail and internet surveys: the tailored design method*. Hoboken, NJ: Wiley.

Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). Effects of Price, Brand, and Store Information on Buyers' Product Evaluations. *Journal of Marketing Research, 28*(3), 307-319.

Doyle, J. (2011, April 26). Bill would bag phony-purse buyers, *New York Post*. Retrieved from http://www.nypost.com/p/news/local/manhattan/bill_would_bag_phony_purse_buyers_6 hf0Hn6XVPYQ2pQaX9NmbI.

Eisend, M., & Schuchert-Güler, P. (2006). Explaining Counterfeit Purchases: a Review and Preview. *Academy of Marketing Science Review, 2006*(12), 1-23.

Enders, C. K. (2010). *Applied missing data analysis*. New York: Guilford Press.

Estacio, L. S. (2013). Showdown in Chinatown: Criminalizing the Purchase of Counterfeit Goods. *Seton Hall Legislative Journal, 37*(2), 381-410.

EUIPO – The European Union Intellectual Property Office. (2016). Anti-Counterfeiting Intelligence Support Tool: The European Union Intellectual Property Office.

European Commission (2014). Report on EU customs enforcement of intellectual property rights. Results at the EU border 2013.

European Commission (2016). U-Multirank. Retrieved from http://ec.europa.eu/education/tools/u-multirank_en.htm.

EPO & OHIM – European Patent Office; The Office for Harmonization in the Internal Market. (2013). Intellectual property rights intensive industries: contribution to economic performance and employment in the European Union. Retrieved from http://ec.europa.eu/internal_market/intellectual-property/docs/joint-report-epo-ohim-final-version_en.pdf.

Europol, & OHIM – Office for Harmonization in the Internal Market (2015). 2015 Situation Report on Counterfeiting in the European Union. Europol and the Office for Harmonization in the Internal Market Retrieved from https://oami.europa.eu/ohimportal/documents/11370/80606/2015+Situation+Report+on+Counterfeiting+in+the+EU.

Eurostat (2015a). Information society statistics [Data file]. Retrieved from http://ec.europa.eu/eurostat/web/information-society/data/database.

Eurostat (2015b). National accounts and GDP. Retrieved from http://ec.europa.eu/eurostat/statistics-explained/index.php/National_accounts_and_GDP#Income.

FBI. (2002). *For Immediate Release, July 17, 2002*. Washington D.C.: Retrieved from http://www.fbi.gov/pressrel/pressrel02/outreach071702.htm.

Fejes, Z. L., & Wilson, J. M. (2013). Cue utilization in the product authentication process: a framework and research agenda for product counterfeit prevention. *International Journal of Comparative and Applied Criminal Justice, 37*(4), 317-340.

Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley.

Fornaro, M. (2003). Parallel Problem: Grey Market Goods and the Internet. *Journal of Technology Law & Policy*(69).

Fourtou, J. R. (2006). *Opening speech*. Paper presented at the BASCAP (Business Action to Stop Counterfeiting and Piracy) meeting, Paris.

Fricker, R. D. (2008). Sampling Methods for Web and E-mail Surveys. . In N. Fielding, R. M. Lee & G. Blank (Eds.), *The SAGE Handbook of Online Research Methods* (pp. 195-217). London, England: SAGE Publications, Ltd.

Fullerton, R. A., & Punj, G. (1993). Choosing to Misbehave: a Structural Model of Aberrant Consumer Behavior. *Advances in Consumer Research*.

Furnham, A., & Valgeirsson, H. (2007). The effect of life values and materialism on buying counterfeit products. *The Journal of Socio-Economics, 36*(5), 677-685.

Geis, G. (2000). On the Absence of Self-Control as the Basis for a General Theory of Crime: A Critique. *Theoretical Criminology, 4*(1), 35-53.

Gentry, J. W., Putrevu, S., & Shultz, C. J. (2006). The effects of counterfeiting on consumer search. *Journal of Consumer Behaviour*(5), 245-256.

Gentry, J. W., Putrevu, S., Shultz, C. J., & Commuri, S. (2001). How Now Ralph Lauren? The Separation of Brand and Product in a Counterfeit Culture. In M. C. G. a. J. Meyers-Levy (Ed.), *Advances in Consumer Research* (Vol. 28, pp. 258-265). Valdosta, GA.

George, D., & Mallery, P. (2010). *SPSS for Windows step by step: a simple guide and reference, 17.0 update* (Vol. 10th). Boston: Allyn & Bacon.

GfK (2013). GfK Purchasing Power Europe, 2013/14: Gesellschaft für Konsumforschung.

Glass, R. S., & Wood, W. A. (1996). Situational determinants of software piracy: An equity theory perspective. *Journal of Business Ethics, 15*(11), 1189-1198.

Gottfredson, M. R. (2006). The Empirical Status of Control Theory in Criminology. In F. T. Cullen, J. Wright & K. Blevins (Eds.), *Taking Stock: The Status of Criminological Theory*. New Brunswick, New Jersey: Transaction Publishers.

Gottfredson, M., & Hirschi, T. (1987). The Methodological Adequacy of Longitudinal Research on Crime*. Criminology, 25(3), 581-614.

Gottfredson, M. R., & Hirschi, T. (1990). *A general theory of crime*. Palo Alto, CA: Stanford University Press.

Gottfredson, Michael R., and Travis Hirschi. 2003. Self-control and opportunity. In *Control Theories of Crime and Delinquency,* eds. Chester L. Britt and Michael R. Gottfredson. New Brunswick, NJ: Transaction Publishers.

Graham, J. W. (2009). Missing data analysis: making it work in the real world. *Annual review of psychology*, 60(1), 549-576.

Graham, J. W. (2012). *Missing data: analysis and design*. New York, NY: Springer.

Grasmick, H. G., Tittle, C. R., Bursik, R. J., & Arneklev, B. J. (1993). Testing the Core Empirical Implications of Gottfredson and Hirschi's General Theory of Crime. *Journal of Research in Crime and Delinquency, 30*(1), 5-29.

Grossman, G. M., & Shapiro, C. (1988a). Foreign counterfeiting of status goods. *Quarterly Journal of Economics*, 103, 79–100.

Grossman, G. M., & Shapiro, C. (1988b). Counterfeit-product trade. *American Economic Review*, 78, 59–75.

Groves, R. M., Fowler Jr., F. J., Couper, M., Lepkowski, J. M., Singer, E., & Tourangeau, R. (2009). *Survey methodology* (2nd edition). Hoboken, N.J.: Wiley.

Hagan, F. E. (2013). *Research Methods in Criminal Justice and Criminology* (9 ed.): Prentice Hall.

Hanisch, J. U. (2005). Rounded responses to income questions. *Allgemeines Statistisches Archiv, 89*(1), 39-48.

Harrist, S. (2006). A phenomenological investigation of the experience of ambivalence. *Journal of Phenomenological Psychology*(37), 1.

Hastie, T., Tibshirani, R., & Friedman, J. H. (2009). The elements of statistical learning: data mining, inference, and prediction (Vol. 2nd). New York, NY: Springer.

Hay, C. (2001). Parenting, Self-Control, and Delinquency: A Test of Self-Control Theory*. *Criminology, 39*(3), 707-736.

Heinonen, J. A., Holt, T. J., & Wilson, J. M. (2012). Product Counterfeits in the Online Environment: An Empirical Assessment of Victimization and Reporting Characteristics. *International Criminal Justice Review*.

Heinonen, J. A., Spink, J., & Wilson, J. M. (2014). When crime events defy classification: The case of product counterfeiting as white-collar crime. [Original Article]. *Secur J*.

Hennig-Thurau, T., Henning, V., & Sattler, H. (2007). Consumer File Sharing of Motion Pictures. *Journal of Marketing, 71*(4), 1-18.

Hetzer, W. (2002). Godfathers and Pirates: Counterfeiting and Organized Crime. *European journal of crime, criminal law, and criminal justice*, 10(4), 303-320.

Higgins, G. E. (2004). Can low self-control help with the understanding of the software piracy problem? *Deviant Behavior*, 26(1), 1-24.

Higgins, G. E., Fell, B. D., & Wilson, A. L. (2006). Digital Piracy: Assessing the Contributions of an Integrated Self-Control Theory and Social Learning Theory Using Structural Equation Modeling. *Criminal Justice Studies, 19*(1), 3-22.

Higgins, G. E., Fell, B. D., & Wilson, A. L. (2007). Low Self-Control and Social Learning in Understanding Students' Intentions to Pirate Movies in the United States. *Social Science Computer Review*, 25(3), 339-357.

Higgins, G. E., Wolfe, S. E., & Marcum, C. D. (2008). Digital Piracy: An Examination of Three Measurements of Self-Control. *Deviant Behavior*, 29(5), 440-460.

Hill, M. A. (1997). SPSS missing value analysis 7.5 Chicago, Illinois: SPSS Inc.

Hirschi, T., & Gottfredson, M. (1993). Commentary: Testing the general theory of crime. *The Journal of Research in Crime and Delinquency, 30*(1), 47.

Hitchins, K. (2014). A concise history of Romania. New York: Cambridge University Press.

Hilton, B., Choi, C. J., & Chen, S. (2004). The ethics of counterfeiting in the fashion industry: quality, credence and profit issues. *Journal of Business Ethics, 55*(4), 343-352.

Hirschi, T. (1969). *Causes of delinquency*. Berkeley: University of California Press.

Hoe, L., Hogg, G., & Hart, S. (2003). Fakin' it: Counterfeiting and Consumer Contradictions. *European Advances in Consumer Research, 6*, 60-67.

Hollis, M. E., Fejes, Z. L., Fenoff, R., & Wilson, J. M. (2015). Routine activities and product counterfeiting: a research note. *International Journal of Comparative and Applied Criminal Justice, 39*(3), 257-272.

Hollis, M. E., & Wilson, J. (2014). Who are the guardians in product counterfeiting[quest] A theoretical application of routine activities theory. [Original Article]. *Crime Prev Community Saf, 16*(3), 169-188.

Holt, T. J. (2009). Social Learning Theory. *Oxford Bibliographies Online: Criminology*, from http://www.oxfordbibliographies.com/document/obo-9780195396607/obo-9780195396607-0002.xml.

Holt, T. J., Burruss, G. W., & Bossler, A. M. (2010). Social Learning and Cyber-Deviance: Examining the Importance of a Full Social Learning Model in the Virtual World. *Journal of Crime and Justice, 33*(2), 31-61.

Holt, T. J., Bossler, A. M., & May, D. (2012). Low Self-Control, Deviant Peer Associations, and Juvenile Cyberdeviance. *American Journal of Criminal Justice, 37*(3), 378-395.

Hosmer, D. W., Hosmer, T., Le Cessie, S., & Lemeshow, S. (1997). A comparison of goodness-of-fit tests for the logistic regression model. *Statistics in Medicine*, 16(9), 965-980.

Hosmer, D. W., Lemeshow, S., & Sturdivant, R. X. (2013). *Applied logistic regression* (Vol. Third). Hoboken, New Jersey: Wiley.

Howie, M. (2010, August 29). Fake goods are fine, says EU study, *The Telegraph*. Retrieved from http://www.telegraph.co.uk/finance/newsbysector/retailandconsumer/7969335/Fake-goods-are-fine-says-EU-study.html.

Huang, J.-H., Lee, B. C. Y., & Ho, S. H. (2004). Consumer attitude toward gray market goods. *International Marketing Review, 21*(6), 598-614.

INSOMAR. (2006). Fenomenul Contrafacerilor Produselor şi Serviciilor în România: Institutul Naţional pentru Studii de Opinie şi Marketing.

INTA – International Trademark Association (2015). Parallel Imports (Gray Market Goods) Retrieved 04.20, 2015, from http://www.inta.org/TrademarkBasics/FactSheets/Pages/ParallelImportsFactSheet.aspx.

Irimie, R. C. (2014). *Religion and political identification in Communist Romania*. Polis (Bucharest, Romania), 2(2), 47-66.

Israel, G. D. (1992). *Determining sample size*: University of Florida Cooperative Extension Service, Institute of Food and Agriculture Sciences, EDIS.

Jordan, P. (2005). The Concept of the Cultural Region and the Importance of Coincidence between Administrative and Cultural Regions. *Romanian review of regional studies(1)*, 13-18.

Kelesidis, T., Kelesidis, I., Rafailidis, P. I., & Falagas, M. E. (2007). Counterfeit or substandard antimicrobial drugs: a review of the scientific evidence. *Journal of Antimicrobial Chemotherapy*(60), 214-236.

Koklic, M. K. (2011). Non-Deceptive Counterfeiting Purchase Behavior: Antecedents Of Attitudes And Purchase Intentions. *The Journal of Applied Business Research, 27*(2).

Kollmannová, D. K. (2012). "Fake product? Why not!" Attitudes toward the consumption of counterfeit goods in CEE as shown on the example of Slovakia. *Central European Business Review, 1*(2), 23.

Kornhauser, R. R. (1978). *Social sources of delinquency: An appraisal of analytic models*. Chicago, IL: University of Chicago Press.

LaGrange, T. C., & Silverman, R. A. (1999). Low self-control and opportunity: Testing the general theory of crime as an explanation for gender differences in delinquency. *Criminology*, 37(1), 41-72.

Large, J. (2015). 'Get real, don't buy fakes': Fashion fakes and flawed policy – the problem with taking a consumer-responsibility approach to reducing the 'problem' of counterfeiting. *Criminology and Criminal Justice, 15*(2), 169-185.

Larson-Hall, J. (2010). *A guide to doing statistics in second language research using SPSS*. New York; London: Routledge.

Lee, S.-H., & Yoo, B. (2009). A Review of the Determinants of Counterfeiting and Piracy and the Proposition for Future Research. [Lit review]. *The Korean Journal of Policy Studies, Vol. 24*(1), 1-38.

Lilly, J. R., Cullen, F. T., & Ball, R. A. (2011). *Criminological theory: context and consequences* (Vol. 5th). Thousand Oaks, Calif: SAGE Publications.

Little, R. J. A. (1988). A Test of Missing Completely at Random for Multivariate Data with Missing Values. *Journal of the American Statistical Association*, 83(404), 1198-1202.

Little, R. J. A., & Rubin, D. B. (2002). *Statistical analysis with missing data* (Vol. 2nd;). Hoboken, N.J: Wiley.

Liu, Y. (2007). *On goodness-of-fit of logistic regression model*. Dissertation/Thesis, ProQuest Dissertations Publishing.

Livezeanu, I. (2000). *Cultural politics in Greater Romania: regionalism, nation building & ethnic struggle, 1918-1930*. Ithaca: Cornell University Press.

López, J., & Scott, J. (2000). *Social structure*. Philadelphia;Buckingham [England];: Open University Press.

MacCallum, R. C., Zhang, S., Preacher, K. J., & Rucker, D. D. (2002). On the practice of dichotomization of quantitative variables. *Psychological Methods*, 7(1), 19-40.

Matsueda, R. L. (1988). The Current State of Differential Association Theory. *Crime & Delinquency*, 34(3), 277-306.

Matsueda, R. L., & Anderson, K. (1998). The dynamics of delinquent peers and delinquent behavior. *Criminology*, 36(2), 269-308.

Marenin, O., & Reisig, M. D. (1995). "A general theory of crime" and patterns of crime in nigeria: An exploration of methodological assumptions. *Journal of Criminal Justice, 23*(6), 501-518.

McKnight, P. E., McKnight, K. M., Sidani, S., & Figueredo, A. J. (2007). *Missing data: A gentle introduction*. New York, NY, US: Guilford Press.

Meade, A. W., & Craig, S. B. (2012). Identifying careless responses in survey data. *Psychological Methods*, 17(3), 437-455.

Morris, R. G., & Higgins, G. E. (2009). Neutralizing Potential and Self-Reported Digital Piracy: A Multitheoretical Exploration Among College Undergraduates. *Criminal Justice Review*, 34(2), 173-195.

Morris, R. G., & Higgins, G. E. (2010). Criminological theory in the digital age: The case of social learning theory and digital piracy. *Journal of Criminal Justice*, 38(4), 470-480.

Mourali, M., Michel, L., & Frank, P. (2005). Individualistic orientation and consumer susceptibility to interpersonal influence. *Journal of Services Marketing, 19*(3), 164-173.

Munro, B. H. (2005). *Statistical methods for health care research* (Vol. 5th). Philadelphia: Lippincott Williams & Wilkins.

Murgescu, B. (2010). *România și Europa. Acumularea decalajelor economice (1500-2010)*. Iași: Polirom.

Nagy, J. (2012). Tackling cigarette smuggling with enforcement: case studies reviewing the experience in Hungary, Romania and the United Kingdom. *World Customs Journal*, 6(2).

Newsom, J. (2010). Multiple Logistic Regression and Model Fit, Retrieved from http://web.pdx.edu/~g3jn/da2/ho_logistic%20model%20fit.pdf.

Nimigeanu, V. (2002). Organizări teritorial-administrative în spațiul românesc. *Seminarul Geografic "Dimitrie Cantemir", 2*(21-22), 285-286.

NIS – National Institute of Statistics (2011). VOLUMUL III: POPULAȚIA STABILĂ (REZIDENTĂ) – STRUCTURA SOCIAL – ECONOMICĂ. Retrieved 10.19.2015, from http://www.recensamantromania.ro/noutati/volumul-iii-populatia-stabila-rezidenta-structura-social-economica/.

NIS – National Institute of Statistics (2013). Romanian Statistical Yearbook 2013. Retrieved from http://www.insse.ro/cms/ro/content/anuarul-statistic-2013.

NIS – National Institute of Statistics (2013). Romanian Statistical Yearbook 2015. Retrieved from http://www.insse.ro/cms/sites/default/files/field/publicatii/anuarul_statistic_al_romaniei_1.pdf.

NIS – National Institute of Statistics (2015a). Populația României pe localități la 1 ianuarie 2015. Retrieved from: http://www.insse.ro/cms/files/publicatii/pliante%20statistice/Populatia%20Romaniei%20pe%20localitati%20la%201%20ian%202015.pdf.

NIS – National Institute of Statistics (2015b). Household income and expenditure in Quarter IV of 2015. Retrieved from: http://www.insse.ro/cms/en/content/household-income-and-expenditure.

NIS – National Institute of Statistics (2016). Press Release 85/April 6, 2016. Retrieved from: http://www.insse.ro/cms/files/statistici/comunicate/abf/a15/abf_tr4_e15.pdf.

Norum, P. S., & Cuno, A. (2011). Analysis of the demand for counterfeit goods. *Journal of Fashion Marketing and Management: An International Journal*, 15(1), 27-40.

OECD – The Organisation for Economic Co-operation and Development (2007). The Economic Impact of Counterfeiting and Piracy. Paris: Organisation for Economic Co-operation and Development.

OUG 27/2005 (2005). ORDONANŢĂ DE URGENŢĂ nr.97 din 14 iulie 2005 privind evidenţa, domiciliul, reşedinţa şi actele de identitate ale cetăţenilor români. Publicat în M.Of. nr. 641/20 iul. 2005. Retrieved from http://www.cdep.ro/pls/legis/legis_pck.htp_act_text?idt=65141.

Pallant, J. (2010). *SPSS survival manual: a step by step guide to data analysis using SPSS* (Vol. 4th). Maidenhead: Open University Press/McGraw-Hill.

Parliamentary Assembly, Working Papers: 2007 Ordinary Session, Second Part 16-20 April 2007. (2008). Council of Europe Publishing.

Pascu, E. (2009). Counterfeiting, a Precise Target in a Long - Time Battle. *The Annals of the "Stefan cel Mare" University of Suceava. Fascicle of The Faculty of Economics and Public Administration.*, 9(Special), 154-161.

Pascu, E., Milea, O. M., & Nedea, P.-S. (2013). Counterfeiting - violation of intellectual property. *Calitatea* 14(2), 209.

Paternoster, R., & Brame, R. (1998). The Structural Similarity of Processes Generating Criminal and Analogous Behaviors*. *Criminology, 36*(3), 633-670.

Peace, A. G., Galletta, D. F., & Thong, J. Y. L. (2003). Software Piracy in the Workplace: A Model and Empirical Test. *Journal of Management Information Systems, 20*(1), 153-177.

Penz, E., Schlegelmilch, B. B., & Stöttinger, B. (2008). Voluntary Purchase of Counterfeit Products: Empirical Evidence From Four Countries. *Journal of International Consumer Marketing*, 21(1), 67-84.

Penz, E., & Stöttinger, B. (2005). Forget the "Real" Thing-Take the Copy! An Explanatory Model for the Volitional Purchase of Counterfeit Products. [Article]. *Advances in Consumer Research, 32*(1), 568-575.

Phau, I., Sequeira, M., & Dix, S. (2009). Consumers' willingness to knowingly purchase counterfeit products. *Direct Marketing: An International Journal, 3*(4), 262 - 281.

Phillips, T. (2007). *Knockoff: The Deadly Trade in Counterfeit Goods: The True Story of the World's Fastest Growing Crime Wave*: Kogan Page Publishers.

Piquero, N. L., Tibbetts, S. G., & Blankenship, M. B. (2005). examining the role of differential association and techniques of neutralization in explaining corporate crime. *Deviant Behavior*, 26(2), 159-188.

Pollinger, Z. A. (2008). Counterfeit Goods and Their Potential Financing of International Terrorism. *The Michigan Journal of Business, 1*(1), 85-102.

Posea, G. (2006). *GEOGRAFIA FIZICĂ A ROMÂNIEI* (Vol. 1). Bucureşti: Editura Fundaţiei România de Mâine.

Post, R. S., & Post, P. N. (2007). *Global Brand Integrity Management: How to Protect Your Product in Today's Competitive Environment*: McGraw-Hill.

Pratt, T. C., & Cullen, F. T. (2000). The empirical status of Gottfredson and Hirschi's General Theory of Crime: A Meta-Analysis. *Criminology, 38*(3), 931-964.

Pratt, T. C., Cullen, F. T., Sellers, C. S., Thomas Winfree, L., Madensen, T. D., Daigle, L. E., . . . Gau, J. M. (2010). The Empirical Status of Social Learning Theory: A Meta-Analysis. *Justice Quarterly, 27*(6), 765-802.

Reed, G. E., & Yeager, P. C. (1996). Organizational Offending and Neoclassical Criminology: Challenging the Reach of A General Theory of Crime. *Criminology, 34*(3), 357-382.

REI – Registrul Educațional Integrat (2016). Retrieved from https://www.rei.gov.ro/index.php ?&c=23&ddpN=1603056339&we=064a0196806f1159ce5df19dc5369c58&wf=dGFCall &wtok=6308325c07a9fc6db349f761c3815a340770bd52&wtkps=S7QysqoutjK2UirOTF Gy9rMuBgoolaeCmLUA&wchk=9fbe56a3337c28b01d89674b1e3e1618fe418f67.

Reianu, D.-G., & Barna, R. (2014). EUROPEANIZATION OF REGIONAL IDENTITIES IN ROMANIA. CASE STUDY: THE LAND OF MOȚI. *Studia Universitatis Babes-Bolyai. Studia Europaea, 59*(2), 63-78.

Rossi, P. H., Wright, J. D., & Anderson, A. B. (2000). *Handbook of survey research*. San Diego [etc.]: Academic Press.

Rubin, D. B. (1976). Inference and Missing Data. *Biometrika*, 63(3), 581.

Rubin, D. (1996). Multiple imputation after 18+ years. *Journal of the American Statistical Association*, 91, 473–489.

Rura, M. J. (1961). *Reinterpretation of history as a method of furthering communism in Rumania, a study in comparative historiography*. Washington: Georgetown University Press.

Rutter, J., & Bryce, J. (2008). The Consumption of Counterfeit Goods: `Here Be Pirates?'. *Sociology, Volume 42*(6), 1146–1164.

Sainani, K. L. (2015). Dealing With Missing Data. *PM & R*, 7(9), 990-994.

Săgeată, R. (2013). *ORGANIZAREA ADMINISTRATIVTERITORIALĂ A ROMÂNIEI EVOLUȚIE. PROPUNERI DE OPTIMIZARE*. Bucuresti: Academia Română. Institutul de Geografie.

Schiffman, L., & Kanuk, L. (2014). *Consumer behavior*: Pearson Education.

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and Quasi-Experimental Designs for Generalized Causal Inference*. Belmont, CA: Wadsworth Publishing.

Schafer, J. L., & Graham, J. W. (2002). Missing data: Our view of the state of the art. *Psychological Methods*, 7(2), 147-177.

Scheffer, J. (2002). Dealing with Missing Data. *Res. Lett. Inf. Math. Sci.*(3), 153-160.

Schomaker, M., & Heumann, C. (2014). Model selection and model averaging after multiple imputation. *Computational Statistics & Data Analysis, 71*, 758-770.

Seipel, C., & Eifler, S. (2010). Opportunities, Rational Choice, and Self-Control: On the Interaction of Person and Situation in a General Theory of Crime. *Crime & Delinquency*, 56(2), 167-197.

Shao, J., & Sitter, R. R. (1996). Bootstrap for imputed survey data. *Journal of the American Statistical Association, 91*(435), 1278.

Sharma, P., & Chan, R. Y. K. (2011). Counterfeit proneness: Conceptualisation and scale development. *Journal of Marketing Management, 27*(5-6), 602-626.

Sheatsley, P. B. (2000). Questionnaire Construction and Item Writing. In P. H. Rossi, J. D. Wright & A. B. Anderson (Eds.), *Handbook of survey research.* San Diego [etc.]: Academic Press.

Shultz, C. J., & Saporito, B. (1996). Protecting intellectual property: Strategies and recommendations to deter counterfeiting and brand piracy in global markets. *The Columbia Journal of World Business, 31*(1), 18-28.

Silverman, A. (2009). Draconian or Just? Adopting the Italian Model of Imposing Administrative Fines on the Purchasers of Counterfeit Goods. *Cardozo Journal of International and Comparative Law*(17).

Singleton, R. A., Jr., & Straits, B. C. (2009). *Approaches to social research* (5 ed.). New York: Oxford University Press.

Siponen, M., Vance, A., & Willison, R. (2012). New insights into the problem of software piracy: The effects of neutralization, shame, and moral beliefs. *Information & Management*, 49(7-8), 334.

Slocum, J. T. (2010). Counterfeit Goods: How Did We Get Here and Where Will We Go Next? Retrieved from http://www.consulegis.com/fileadmin/downloads/thomas_marx_0910/consulegis_tma_jenny_slocum.pdf.

Spink, J., & Fejes, Z. L. (2012). A Review of the Economic Impact of Counterfeiting and Piracy Methodologies. *International Journal of Comparative and Applied Criminal Justice, 36*(4), 249-271.

Staake, T., Thiesse, F., & Fleisch, E. (2009). The emergence of counterfeit trade: a literature review. *European Journal of Marketing, 43*(3/4), 320-349.

Statistical analyses using SPSS. (2016), UCLA: Statistical Consulting Group. Retrieved from http://www.ats.ucla.edu/stat/spss/whatstat/whatstat.htm#bitest.

STOP Pirateria (2008, November 28). Categorii de produse contrafăcute. Retrieved from http://stoppirateria.ro/GhidPracticID.php?ID=7.

Strahan, R., & Gerbasi, K. C. (1972). Short, homogeneous versions of the Marlow-Crowne Social Desirability Scale. *Journal of Clinical Psychology*, 28(2), 191-193.

Sudman, S. (2000). Applied Sampling. In P. H. Rossi, J. D. Wright & A. B. Anderson (Eds.), *Handbook of survey research*. San Diego [etc.]: Academic Press.

Sullivan, B. A., Chermak, S. M., Wilson, J. M., & Freilich, J. D. (2014). The nexus between terrorism and product counterfeiting in the United States. *Global Crime, 15*(3-4), 357-378.

Surd, V. (2005). Regions in Romania: Purpose and Territorial Realities. *Romanian review of regional studies, 1*(1), 47-50.

Sutherland, E. H., & Cressey, D. R. (1955). Principles of criminology. Philadelphia: Lippincott.

Swami, V., Chamorro-Premuzic, T., & Furnham, A. (2009). Faking it: Personality and individual difference predictors of willingness to buy counterfeit goods *Journal of Socio-Economics, 38*(5), 820-825.

Swinyard, W. R., Rinne, H., & Kau, A. K. (1990). The morality of software piracy: A cross-cultural analysis. *Journal of Business Ethics*, 9(8), 655-664.

Sykes, G. M., & Matza, D. (1957). Techniques of Neutralization: A Theory of Delinquency. *American Sociological Review, 22*(6), 664-670.

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics*: Pearson Education.

The links between intellectual property crime and terrorist financing, (2003). Hearing before the United States House Committee on International Relations.

Thornberry, T. P., & Krohn, M. D. (2000). The self-report method for measuring delinquency and crime. *Criminal justice*, 4(1), 33-83.

Tom, G., Garibaldi, B., Zeng, Y., & Pilcher, J. (1998). Consumer demand for counterfeit goods. *Psychology and Marketing, 15*(5), 405-421.

Trademark Counterfeiting: Hearing Before the Committee on the Judiciary, U.S. Senate. 104th Cong. (1997).

Treverton, G. F., Matthies, C., Cunningham, K. J., Goulka, J., Ridgeway, G., & Wong, A. (2009). *Film piracy, organized crime, and terrorism*. Santa Monica, CA: Rand Corporation.

Tukey, J. W. (1977) *Exploratory Data Analysis*. Addison-Wesley, Reading, MA.

Turner, M. G., & Piquero, A. R. (2002). The stability of self-control. *Journal of Criminal Justice, 30*(6), 457-471.

UNODC. (2010). The Globalization of Crime. A Transnational Organized Crime Threat Assessment. Vienna: United Nations Office on Drugs and Crime. Studies and Threat Analysis Section, Policy Analysis and Research Branch, Division for Policy Analysis and Public Affair.

U.S. Chamber Commerce. (2007). Counterfeiting in the United States. Consumer Behaviors and Attitudes. Princeton, NJ.: US Chamber of Commerce.

U.S. GAO. (2008). Federal Enforcement Has Generally Increased, but Assessing Performance Could Strengthen Law Enforcement Efforts. Washington, DC: United States Government Accountability Office.

U.S. GAO. (2010). Observations on Efforts to Quantify the Economic Effects of Counterfeit and Pirated Goods *Intellectual Property*: United States Government Accountability Office.

Vaus, D. d. (2002). Analyzing Social Science Data: 50 Key Problems in Data Analysis. London: Sage.

Vehovar, V., & Manfreda, K. L. (2008). Overview: Online Surveys. In N. G. Fielding, R. M. Lee & G. Blank (Eds.), *The SAGE Handbook of Online Research Methods* (pp. 176-195). London, England: SAGE Publications, Ltd.

Vida, I. (2007). Determinants of Consumer Willingness to Purchase Non-Deceptive Counterfeit Products and the European Union. *Managing Global Transitions*, 5(3), 253-270.

Vilau, D. M. (2013). Anti-counterfeiting: Romania. *World Trademark Review*(2013), 177-181.

Waal, T. d., Pannekoek, J., & Scholtus, S. (2011). *Handbook of statistical data editing and imputation*. Hoboken, N.J: Wiley.

Wall, D. S., & Large, J. (2010). Jailhouse Frocks: Locating the Public Interest in Policing Counterfeit Luxury Fashion Goods. *British Journal of Criminology, 50*(6), 1094-1116.

Warr, M. (2005). Making delinquent friends: Adult supervision and children's affiliations*. *Criminology, 43*(1), 77-106.

Warr, M., & Stafford, M. (1991). The influence of delinquent peers: What they think or what they do? *Criminology* (29), 851-865.

Watt, J. H., & van den Berg, S. A. (1995). *Research methods for communication science*. Boston: Allyn and Bacon.

Wee, C. H., Ta, S. J., & Cheok, K. H. (1995). Non-price determinants of intention to purchase counterfeit goods – an exploratory study. *International Marketing Review, 12* (6), 19-46.

Winfree, L. T., & Bernat, F. P. (1998). Social Learning, Self-control, and Substance Abuse by Eighth Grade Students: A Tale of Two Cities. *Journal of Drug Issues, 28*(2), 539.

WIPO. (n.d.). What is Intellectual Property? Retrieved 05.20, 2015, from http://www.wipo.int/edocs/pubdocs/en/intproperty/450/wipo_pub_450.pdf.

Wolfe, S. E., & Higgins, G. E. (2009). Explaining Deviant Peer Associations: An Examination of Low Self-Control, Ethical Predispositions, Definitions, and Digital Piracy. Western Criminology Review, 10(1), 43-55.

Yoo, B., & Lee, S.-H. (2004). The Buyers of Counterfeit Products in South Korea. *Journal of International Business and Law*(3), 95.