

Politecnico di Milano Master's Degree in Design for the Fashion System

MODULAR ACCESSORY WITH EMBEDDED TECHNOLOGY AGAINST PICKPOCKET

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ABSTRACT

Societies have been dealing with "Pickpocket" over centuries. Defined as: "The crime of stealing things out of people's pockets or bags, especially in a crowd" It is a common problem that majorly affects the inhabitants or visitors of large metropolitan cities with high number population density, international communities, and large transportation systems inside them. Even though it is a situation that happens regularly the measurements are not quite effective, and several gaps can be found inside them. This document explores the main characteristics of this larceny and its victims' profiles to create a new collection of products that can help this victims, or possible ones, to prevent, protect and assist by using Internet of Things and wearable technology. Technology was the direction selected for the purpose of this project because it offers different possible solutions to approach this subject, considering that exist a major quantity of possible cases an scenario for this type of felony.

The information of this document is the result of an extensive of research methodology composed by a desktop research, a series of interviews and surveys, statistical data collection, market analysis, product research and design proposals exploration with the aim of find the best solution proposal that could help to reduce or/and discourage this criminal activity.

ESTRATTO

Le società hanno affrontato il borseggio da secoli. Definito come: "Il crimine di rubare cose dalle tasche o dalle borse delle persone, specialmente in mezzo alla folla" È un problema comune che colpisce maggiormente gli abitanti oi visitatori delle grandi città metropolitane con alta densità di popolazione, comunità internazionali e grandi sistemi di trasporto dentro di loro. Anche se è una situazione che si verifica regolarmente, le misurazioni non sono del tutto efficaci e al loro interno si possono trovare diverse lacune. Questo documento esplora le caratteristiche principali di questo reato e i profili delle sue vittime per creare una nuova collezione di prodotti che possono aiutare queste vittime, o possibili, a prevenire, proteggere e assistere utilizzando l'Internet of Things e la tecnologia indossabile. La tecnologia è stata la direzione scelta ai fini di questo progetto perché offre diverse possibili soluzioni per affrontare questo argomento, considerando che esiste una grande quantità di casi possibili uno scenario per questo tipo di crimine.

Le informazioni di questo documento sono il risultato di un'estensione della metodologia di ricerca composta da ricerca desktop, una serie di interviste e sondaggi, raccolta di dati statistici, analisi di mercato, ricerca di prodotto ed esplorazione di proposte progettuali con l'obiettivo di trovare la migliore proposta di soluzione che potrebbe aiutare a ridurre o / e scoraggiare questa attività criminale.

CHAPTER 1: ONCE UPON A TIME... THEFT AND PICKPOCKETING PROBLEM ANALYSIS

1.1 UNDERSTANDING THE DIFFERENCE: PROPERTY CRIME, THEFT AND LARCENY.

To understand pickpocketing, it is important to analyze the classification and typology of this act from a legal perception, it is located inside of the Property Crime category. Property is anything that is owned by a person or entity (Hill & Hill, 2002) therefore a Property Crime is an illegal activity involving the transfer or destruction of property, including money, cars, jewelry, shoes, drugs, or other forms of wealth, whether or not violence is used or threatened in doing so (Wright & Jacques, 2009). Some of the most common examples are kidnapping, fraud, tax evasion, vandalism, arson, and theft.

Theft, according to The Cambridge Dictionary, is defined as "(the act of) dishonestly taking something that belongs to someone else and keeping it". Societies have been struggling with this kind of problem over millenniums. It is difficult to define the exact moment when this kind of act started being practiced but History records can show us that it has been carried out even during the origins of civilizations, where the concepts of property and ownership started being used. If we analyze The Code of Hammurabi; Law 22 and 23. (King, 2008)), the Babylonian law code of ancient Mesopotamia, we can find several measurements taken by the government to punish this kind of felony. The same happens in the Pharaonic Egypt where the punishments varied depending on the value of the stollen good or the hierarchy of the affected party, and it can even be found inside of theological texts, such as the Judeo-Christian Decalogue or the Dharma shastras from the Hinduism. Theft can be considered as one of the oldest crimes of all ages.

From a Juridical perspective theft is "the generic term for all crimes in which a person intentionally and fraudulently takes personal property of another without permission or consent and with the intent to convert it to the taker's use (including potential sale)" (Hill & Hill, 2002). The most usual forms of theft are:

Robbery, that is the type of theft where violence is applied (physical force, weapons and/or threats); Burglary, when someone trespass the limits of private property with the aim of stealing physical goods; and Larceny, being the appropriation of someone else's goods without their consent and sometimes secretly.

For a Larceny to occur is important to considerer some aspects:

- 1. The goods must be removed from the possession of another without the owner's consent.
- 2. The goods must not only be taken but also "carried away," a requirement that is highly formalistic and is satisfied by any movement of the entire object, however slight.
- 3. There must be an intention to steal, which is ordinarily defined as an intention to deprive the owner permanently of his property. The unauthorized borrowing of another's property is not larceny if there is an intent to return the property, nor is larceny committed by someone who takes goods in the mistaken belief that they are his own property (Bernard, 1998).

Some examples of Larcenies are purse snatching, shoplifting, theft of bicycles or motor vehicles (also considering accessories), pickpocketing, among others. It is important to remark that, depending on every country Justice System, the legal definitions of property crime offences might change.

1.2 ¿WHAT IS PICKPOCKETING?

Defined as: "The crime of stealing things out of people's pockets or bags, especially in a crowd" (Heacock, 2009). It is a type of larceny performed by the pickpockets that involves high skilled techniques to appropriate other people belongings without them realize at the time the theft is been carried out. This kind of theft has also been practiced over time; in Art we can find several paintings that represent the larceny being carried out, for example, "The Conjurer" by Bosch (Figure 1.1) here we can observe a representation of a street performance where one man from the audience gets distracted by the conjurer meanwhile a little child is trying to steal from his pocket. This kind of street shows, such as magicians or fortune tellers, gave criminals an advantage on their victims causing them to be distracted by the performance itself. Another example is the hand sketch made by Leonardo Da Vinci (Figure 1.2) where the man in the center of the scene is surrounded by a group of gypsies and one of them is trying to reach for something underneath the man right arm, giving us the idea of a possible act of theft being executed. It is very clear that even during 14th century pickpockets were well organized to work in groups or gangs.



Figure 1: The conjurer, Falk, k. (2008), The Unknown Hieronymus Bosch (p.7).



Figure 2: Recto: A man tricked by Gypsies. Verso: An inscription describing evil men, Da Vinci, L, c.1493, (pen and ink, 26.0 x 20.5 cm sheet of paper)

Pickpocketing not only can be found on paintings, one of the most famous characters for the English literature written by Charles Dickens, Oliver Twist a lonely orphan who has been forced by his poor situation to become a pickpocket with the goal to survive life in the streets. In the cinema, we can find different examples, probably one of the oldest films would be The Diabolical Pickpocket / L'Insaisissable pickpocket (Pathé, 1908) where we can see a pickpocket escaping from the cops using different costumes or hiding between the clothes and handbags of pedestrians passing through the street.

This kind of examples gave us an idea of the situation in which people used to live in those different ages, explaining that one of the main reasons for this crime to be done was the underprivileged situation this people have to pass through like poverty and unemployment.

They also show us the skill that these thieves had to evade law enforcement.

In the 17th and 18th centuries, there was already an important number of pickpockets operating in public and/or private places, stealing different types of items (Palk, 2006). Some of them were caught and prosecuted for theft, however in most cases they managed to avoid punishment.

In Old Bailey (the Central Criminal Court of England and Wales) between 1780 and 1808 the 72% of men pickpockets convicted at the time were aged from under 20 to 30, while 72% of the convicted women were aged between 20 and 40 (Palk, 2006). The reason is that 76 % of women pickpockets were prostitutes which

resulted that the victims were more often men. Men who were robbed by prostitutes often chose not to report the offence since they would have had to acknowledge their 'immoral behaviour'. The 80% of the male pickpockets operated in public areas and 78% of the female pickpockets operated in private places robbing their victims in their lodging after having sex (Palk, 2006). In 1916 the "Lady pickpockets" appeared (NY times, 1916) a group of fancy, good-looking women who stole from the 5th Avenue stores or high-class places where people did not realize that there was a criminal. Is clear that pickpocketing has been evolving over time and, with each passing generation, pickpockets only perfect their deceptive ways to outwit both civilians and the Justice System.

1.3 THE KEY ELEMENT: DISTRACTION

It is about to find the perfect possible victim in a perfect scenario, they pursuit the ideal opportunity. Redirecting the attention is the key for this felony, some researchers relate pickpocketing with illusionism, is not just a coincidence why most of pickpockets of the 14th century were street magicians and fortune tellers. During the TEDGlobal 2013 conference "The Art of Misdirection" Apollo Robbins, one of the most well-known pickpockets of the world, declares that he has been predicting pickpocketing human behavior trough emphasizing that human attention can be easily manipulated using a distraction or indeed a misdirection (TED, 2013). In the video we can observe how Robbins get holds on the audience belongings, in front of several cameras without anyone realizing of what he just did. People are usually main focused on their day-to-day routines "Their minds are all preoccupied with their short-term goal and are obviously to any outside distractions." (Yeager, 1990) Pickpocket approaches contact to the victim (or "collision", as Yeager expressed) by creating a sensation from a greater force nullifying that of a lesser force, like pushing and shoving. Once the mark collided with the pickpocket, he reaches for the belongings of the victim taking

advantage that their senses are distracted by the impact (Yeager, 1990).

According to the report elaborated by Manuel Martín-Loeches, a neuroscientist from the Complutense University of Madrid, in collaboration with the Communication Department of the Spanish company group CPP; "The Pickpocketing and their victims: The Distraction", distraction is defined as: "...the phenomenon that occurs consciously or unconsciously inside humans mind for it to divert attention from one thing to and other...". It also mentions that distraction can be generated by external sources, captioned by our senses like images, sounds, noise or events, and internal sources, that are those related with human thoughts, fantasies, emotions and physical needs; for example, a person with depression, anxiety and stress; tend to be more distracted than other with a mental stability thanks to the lack of dopamine. For both cases, attention became an important variable for each induvial.

Context is another crucial point. From the cognitive perspective, when someone is exposed to a big amount of visual and sound

elements, their attention can be jeopardized. Nowadays, thanks to information overload that smartphones and social media brings to the users "Even talking on the phone can use up all of our cognitive capacity, leaving little or no awareness of anything else." says Earl Miller, a neuroscience professor at MIT (Chun, 2019). Multitaskers are easy marks. "We have a brain that craves information," yet we're

immersed in an environment "that provides too much of it... It's a pickpocket's world." (Miller E.). From the cultural approach, people are willingly focused on what they want to believe in ignoring everything that could be against their way of thinking, perception or reality. The things that became common pass to a second term importance.

1.4 THE "MISLEADING" GLOBAL STATISTICS.

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1.4.1 PICKPOCKETING BY GEOGRAPHIC POSITION. (WORLDWIDE STATISTICS)

Theft statistics given by the United Nations Office on Drugs and Crime's (UNODC) shown that the most affected continent would be Europe were United Kingdom, Germany, France and Italy seem to be the most aggrieved countries (Table 1); Secondly comes America, where United States, Brazil top the list (Table 2); in Asia the numbers decrease, leaving Japan at the head (Table 3); finally comes Oceania placing Australia as the most affected country (Table 4). The data regarding Africa was notoriously lacking and this phenomenon repeats in some other countries of the list mentioned before. These blank spaces may lead us to believe that there are some anomalies regarding data gathering.

There are different reason why pickpocketing statistics became difficult to track, normally it is investigated in a local level which means that analysis at national and International level are often lacking; It is also estimated that at least half of all the pickpocketing incidents are never reported at all, mainly because the victims usually do not realize when the theft happens, they normally believe that their personal belongings got lost during their daily routine (Verleysen, Cindy, 2017) .Thanks to this specific impact of the damage, reports made by different international organizations can only suggest an blur idea of the real problem.

The UNODC theft statistics shown no specific crime category inside the theft data collected around the globe therefore, besides pickpocketing, another theft typology must be added to the data base such as bag-snatching and shoplifting. The same happens with the data given by Eurostat on 2017 (Table 6) were pickpocketing offences are not specificized. The UNODC also mentions that is important to consider the differences between legal definition and recording methods of the offences in countries, sometimes theft crimes are recorded under another crime typology depending on how the act was carried out, for example, if the act itself was performed with a weapon or a treat, it becomes a Robbery so is no longer consider a Larceny (Chapter 1.1). It was until March of 2015 after the UNODC published the International Classification of Crime for Statistical Purposes (ICCS), that numbers started to be more accurate regarding theft data, but still not quite specific.

			20	12	20	13	20	14	20	15	2016		2017		2018	
n	Sub-region	Country	Count	Rate	Count	Rate										
е	Northern	United Kingdom (England and Wales)	1,361,329	2,406.54	1,326,649	2,329.57	1,267,915	2,208.58	1,357,563	2,345.26	1,467,499	2,513.65	1,573,004	2,677.70	1,593,128	2,694
	Europe	Sweden	379,494	3,976.75	410,762	4,270.76	413,389	4,265.20	399,646	4,092.66	375,396	3,816.55	360,113	3,635.71	334,286	3,352
		Denmark	238,367	4,248.28	269,086	4,772.59	250,773	4,427.33	225,868	3,970.47	225,511	3,948.47	213,924	3,731.92	182,819	3,178
		Norway	133,492	2,662.54	145,940	2,873.14	132,018	2,567.31	114,828	2,208.30	104,507	1,990.25	94,179	1,778.20	92,320	1,729
		Finland	95,737	1,768.07	128,169	2,356.49	127,342	2,331.67	122,404	2,233.19	114,490	2,082.50	110,243	2,000.28	107,937	1,954
		United Kingdom (Scotland)	94,551	1,779.42	101,870	1,912.08	95,021	1,776.89	86,748	1,614.52	84,867	1,570.24	86,543	1,595.32	86,569	1,591
		Ireland	67,954	1,474.63	78,737	1,705.95	77,697	1,679.26	72,716	1,562.97	62,043	1,321.25	66,942	1,408.33	64,535	1,339
		United Kingdom (Northern Ireland)	23,824	1,306.40	27,289	1,491.43	26,831	1,457.81	25,707	1,388.35	24,041	1,291.04	23,407	1,251.15	24,178	1,284
		Lithuania	23,478	770.89	27,952	928.97	27,895	938.75	22,783	777.08	19,963	690.87	17,040	598.86	12,833	458
		Latvia	21,341	1,031.46	20,623	1,008.48	20,578	1,018.10	19,387	970.48	14,570	738.00	14,534	744.91	14,047	728
		Estonia	18,628	1,407.84	16,465	1,248.23	15,738	1,195.65	11,354	863.21	8,982	682.26	7,633	578.53	7,403	559
		Iceland	4,147	1,273.48	4,102	1,253.69	3,670	1,116.89	4,032	1,220.94	3,472	1,045.13	3,822	1,142.96	3,285	975
	Western	Germany	1,267,576	1,565.44	1,289,071	1,588.03	1,322,144	1,623.25	1,348,955	1,649.34	1,290,481	1,570.05	1,156,422	1,399.04	1,082,478	1,30
	Europe	France	1,173,885	1,846.77	1,390,001	2,175.50	1,429,398	2,226.70	1,397,363	2,168.03	1,381,425	2,136.19				
		Netherlands	652,250	3,884.32	391,946	2,326.99	365,371	2,162.92	335,120	1,978.45	304,065	1,790.59	259,095	1,522.18	234,150	1,37
		Belgium	237,921	2,146.27	224,109	2,009.22	208,443	1,857.58	246,853	2,186.88	232,387	2,046.67	223,088	1,953.53	218,243	1,90
1		Switzerland	200,647	2,505.58	194,561	2,399.36	171,872	2,094.47	157,911	1,903.28	146,359	1,746.55	141,504	1,673.46	136,011	1,59
		Austria	150,965	1,775.59	154,002	1,799.89	148,263	1,720.95	140,254	1,616.08	143,531	1,640.86	125,376	1,421.51	112,613	1,26
		Luxembourg	9,243	1,741.15	10,334	1,904.70	10,259	1,850.10	9,193	1,622.08	9,954	1,718.38	10,090	1,704.64	10,312	1,70
		Monaco					605	1,621.11	544	1,442.09	416	1,092.72				Ė
		Liechtenstein	197	538.03	233	630.75	214	574.98	193	515.15	196	520.52	149	394.13	162	427
	Eastern	Russian Federation	992,238	689.08	801,911	555.63	802,163	554.50	874,784	603.36	731,913	503.81	659,649	453.27	648,512	445
	Europe	Poland	230.751	603.63	212.143	555.96	168.577	442.56	145,212	381.79	126.392	332.70	106.923	281.72	98.833	260
		Hungary	130,299	1.320.91	124,276	1,263,75	106.939	1.090.66	111.326	1,138,54	93.592	959.63	80,335	825.66	61,490	633
		Romania	56,732	280.47	57,557	285.89	164,396	820.51	108,439	544.23	92,099	465.23	96,154	489.23	100,407	514
		Czechia	119.367	1.128.09	125.573	1.186.16	103.708	979.20	84.793	799.83	71.224	670.73	66,101	621.19	59.438	557
		Bulgaria	44,462	606.24	45,256	620.79	41,246	569.25	38,315	532.17	32,727	457.60	40,947	576.52	36,922	523
	Southern	Italy	1,066,669	1,781.36	1,099,853	1,828.01	1,121,757	1,856.92	1,229,103	2.028.94	1,132,814	1,867.39	1,069,965	1,763.47	1,001,327	1,65
	Europe	Spain	165,297	351.22	163,464	348.31	155.253	331.89	205.751	440.85	163,077	349.69	162,426	348.20	168,203	360
		Portugal	118,171	1,122.63	109,701	1.047.46	104,764	1,005.58	98,434	949.37	89.305	864.89	88,541	860.58	87.569	853
		Greece	119.078	1.104.50	103.674	965.26	94,082	879.15	55.151	517.38	57.158	538.46	67.849	641.94	58.296	554
		Slovenia	33,905	1,647.61	34,942	1,693.65	30,103	1,456.02	22,798	1,100.72	21,395	1,031.48	20,539	989.17	19,613	943
		Serbia	17,900	200.22	30.882	346.25	26,755	300.68	24,483	275.81	22,441	253.46	20,763	235.15	18,972	215
		Croatia	17,248	401.50	14.051	328.56	12.043	283.00	13.547	320.04	12.739	302.69	12,413	296.76	11,481	276
		Kosovo under UNSCR 1244	16,292	897.33	16.962	931.66	15.607	864.68	12.295	694.00	12,593	706.07	5,569	312.25	5.809	324
		Malta	8,690	2,060.17	8,469	1,987.36	8,198	1,905.67	8,653	1,995.81	8.821	2,022.71	8,255	1,884.98	6,528	1,48
		Albania	5,344	183.38	5.255	180.97	7,961	274.87	7.012	242.59	5,641	195.43	5,096	176.69	5,414	187
		Bosnia and Herzegovina	0,044	100.00	0,200	100.07	7,007	214.01	7,012	272.00	0,041	100.40	5,000	170.00	0,414	107

Table 1: Europe theft count and rate from 2012 to 2018 (UNDOC, 2019)

			201	12	20	13	20	14	20	15	20′	16	20	17	20	18
Region	Sub-region	Country	Count	Rate												
Americas	Northern	United States of America	6,168,874	1,964.33	6,019,500	1,902.49	5,809,100	1,822.90	5,723,500	1,783.70	5,644,800	1,747.53	5,513,000	1,695.87	5,217,100	1,594.97
	America	Canada	514,920	1,474.48	486,562	1,378.50	487,161	1,365.96	502,620	1,395.13	512,504	1,408.64	521,812	1,420.59		
	South	Brazil	1,425,070	715.08	1,784,745	887.77							2,304,980	1,109.05	2,204,299	1,052.33
	America	Argentina					287,063	673.26	271,921	631.27	270,125	620.86	254,681	579.65	277,474	625.49
		Chile	191,095	1,098.22	189,844	1,080.41	193,914	1,091.92	185,542	1,032.55	173,528	952.98	171,247	927.14	172,232	919.59
		Uruguay	96,827	2,865.57	97,465	2,875.55	101,683	2,990.29	109,334	3,204.38	114,985	3,358.07	115,593	3,363.54	145,837	4,228.03
		Peru	76,111	257.94	83,308	279.80	89,599	297.77	94,480	310.07	94,907	306.88	101,580	323.05	133,132	416.18
		Colombia	126,463	274.47	75,998	163.45	74,111	157.79	78,595	165.39	86,564	179.69			89,628	180.48
		Paraguay	36,343	565.96	38,719	594.74	38,704	586.47	38,025	568.49	42,381	625.28				
		Ecuador	15,975	103.24	19,093	121.55	24,300	152.33	33,572	207.08	32,415	196.56	30,839	183.73	29,582	173.15
		Bolivia	5,200	50.11					4,711	43.34	4,867	44.12	4,514	40.33	4,963	43.71
		Guyana	1,669	220.95	2,898	381.68			5,171	673.80	4,816	624.35			1,407	180.61
	Central	Mexico	92,659	79.01	314,792	264.92	314,337	261.17	265,023	217.48	302,726	245.45	381,059	305.39	366,865	290.72
	America	Panama	20,304	538.48	20,587	536.76	21,252	544.74	18,877	475.67	15,983	395.91	18,562	451.99	16,526	395.66
	Caribbean	Puerto Rico	30,545	863.69	29,360	837.93	28,948	838.18	25,165	744.19	23,163	705.52	19,633	620.58	15,642	514.61
		Antigua and Barbuda							1,215	1,298.48	1,015	1,073.85	1,066	1,117.11	895	929.56
		Bahamas	1,985	545.96									1,045	273.74	831	215.49
		Jamaica			532	18.61	447	15.55	335	11.59	941	32.38	780	26.70	713	24.29

 Table 2: America theft count and rate from 2012 to 2018 (UNDOC, 2019)

Source: Data are collected from national authorities through the annual United Nations Crime Trends Survey (UN-CTS).

** The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

*** Note: Please note that when using the figures, any cross-national comparisons of administrative data on crime and criminal justice should be conducted with caution because of the differences that still exist between the legal definitions of offences in countries, the different methods of offence counting and recording and differences in reporting rates. After the adoption of the International Classification of Crime for Statistical Purposes in 2015 many countries have started to reported data that correspond more closely to ICCS categories, which is often notable through a visible break in the time series around the year 2009-2012.

			20	12	20	13	20	14	20	115	20	16	20	17	2018	
egion	Sub-region	Country	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
sia	Central Asia	Kazakhstan	178,461	1,065.34	210,204	1,234.60	207,002	1,196.36	208,907	1,188.86						
		Kyrgyzstan	10,848	192.97	9,975	174.04	9,029	154.49	9,894	166.03	9,292	152.97	10,032	162.07	11,557	183.3
	Eastern Asia	Japan	546,088	425.22	497,676	387.86	451,648	352.39	411,350	321.40	374,497	293.12				
		Republic of Korea	290,055	579.41	288,343	572.73	266,222	526.05	245,853	483.74	203,037	398.24	183,757	359.63	176,809	345.5
		Hong Kong Special Administrative Region of China	33,664	477.72	31,598	445.75							23,806	325.83	21,309	289.0
		Mongolia	6,266	221.83	7,884	273.58	8,424	286.52	9,169	305.79	9,065	296.59	11,321	363.58	13,424	423.4
		Macao Special Administrative Region of China	2,970	526.56	3,006	520.64	2,703	457.97	2,647	439.63	2,932	478.44	2,702	434.00	2,556	404.6
	South-Eastern Asia	Philippines	43,606	44.86	124,168	125.59	112,857	112.28	82,751	81.04	49,634	47.88	34,435	32.74	25,949	24.3
		Indonesia	25,036	10.08	25,593	10.16	24,538	9.62	26,298	10.18	64,507	24.66	63,539	24.01	53,000	19.8
		Thailand	45,183	66.61	43,654	64.06	39,898	58.30	39,371	57.30	33,042	47.91				
		Singapore	17,462	325.21	16,528	303.06	16,182	292.85	15,207	271.94	13,665	241.70	13,024	228.17	11,770	204.4
		Myanmar	2,316	4.50	2,704	5.21	2,964	5.67	2,925	5.55	3,125	5.89			4,770	8.88
	Western Asia	Turkey	208,913	279.85	234,474	308.82	214,204	277.36								
		Lebanon	34,426	621.68	32,550	550.48	28,411	453.77	25,030	383.15						
		United Arab Emirates	14,984	163.91	2,385	25.93	6,541	70.99	6,211	67.05	4,803	51.31	4,509	47.53	4,633	48.1
		Armenia	4,019	139.34	4,659	160.79	4,620	158.63	5,365	183.38	5,677	193.35	5,963	202.49	7,098	240.4
		Iraq (Central Iraq)	10,858	38.68	10,655	36.67	10,456	34.80								
	Southern Asia	India	337,407	26.66	372,622	29.09										
		Pakistan	49,148	26.24	45,494	23.79	42,747	21.89	65,964	33.08	64,201	31.53	65,424	31.47	74,117	34.92
		Sri Lanka	11,704	57.00	11,449	55.41	10,980	52.82	6,425	30.73	6,163	29.32	6,143	29.08	5,996	28.24
		Maldives	6,571	1,654.20	6,683	1,608.07										
		Bhutan	494	70.41	577	81.24	532	73.99								
		Nepal									1,274	4.67				

Table 3: Asia theft count and rate from 2012 to 2018 (UNDOC, 2019)

			20	112	20	13	2	014	20	15	20)16	20)17	20	18
Region	Sub-region	Country	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Africa	Eastern Africa	Burundi	868	9.39	679	7.12	807	8.20								
		Kenya	14,111	31.82			1,239	2.65	1,111	2.32	1,355	2.76				
		Madagascar	61	0.27	62	0.27	195	0.83	222	0.92						
		Uganda	20,649	59.75	18,146	50.84	17,059	46.22			43,515	109.75				
		United Republic of Tanzania	537	1.14	885	1.83	1,043	2.09	179	0.35						
	Middle Africa	Cameroon	15,752	73.32	25,027	113.36	25,270	111.41	16,290	69.92						
	Northern Africa	Algeria	39,787	106.43	54,619	143.21	46,695	119.97	49,571	124.78						
		Morocco	96,321	289.76	107,824	319.80			48,597	140.20					62,926	174.65
	Southern Africa	Botswana					29,656	1,419.89								
	Western Africa	Cabo Verde	3,767	745.58	3,796	741.78	3,996	771.02	4,122	785.53	4,455	838.76	4,388	816.37	3,429	630.60
		Guinea-Bissau			943	57.21	997	58.91								
		Nigeria	22,626	13.53	24,068	14.01										
		Senegal							2,503	17.17						

 Table 4: Africa theft count and rate from 2012 to 2018 (UNDOC, 2019)

			2012		2013		2014		2015		2016		2017		20)18
Region	Sub-region	Country	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
	Australia and					2,348.10		2,269.65	561,174	2,344.82	593,369	2,445.60	562,833	2,289.37	580,739	2,332.46
	New Zealand	New Zealand	101,669	2,275.26	101,814	2,253.26			140,571	3,046.27	137,311	2,947.05	136,305	2,898.85	135,345	2,853.49

 Table 5: Oceania theft count and rate from 2012 to 2018 (UNDOC, 2019)

				Num	ber						Inde	x (2008 = 1	00)		
	2008	2009	2010	2011	2012	2013	2014	2015	2009	2010	2011	2012	2013	2014	2015
EU-28	9 053 651	8 630 460	7 755 972	7 972 783	7 856 003	7 847 273	7 762 188	7 542 702	95.3	85.7	88.1	86.8	86.7	85.7	83.3
Belgium	245 682	249 627	228 355	242 399	237 921	224 109	208 443	186 586	101.6	92.9	98.7	96.8	91.2	84.8	75.9
Bulgaria	42 553	44 278	50 479	47 323	44 462	45 256	41 246	38 315	104.1	118.6	111.2	104.5	106.4	96.9	90.0
Czech Republic	166 085	153 139	126 311	124 274	119 367	125 573	103 708	139 092	92.2	76.1	74.8	71.9	75.6	62.4	83.7
Denmark	246 663	247 388	241 703	244 099	238 367	229 050	214 359	194 475	100.3	98.0	99.0	96.6	92.9	86.9	78.8
Germany	2 052 913	1 308 687	1 219 983	1 276 065	1 267 576	1 285 767	1 309 678	1 337 196	63.7	59.4	62.2	61.7	62.6	63.8	65.1
Estonia	23 506	24 835	25 253	20 175	18 628	16 465	15 738	11 354	105.7	107.4	85.8	79.2	70.0	67.0	48.3
Ireland	76 861	77 031	65 416	66 581	67 954	71 369	69 934	69 462	100.2	85.1	86.6	88.4	92.9	91.0	90.4
Greece	114 900	126 080	118 518	129 148	119 078	103 399	93 677	100 298	109.7	103.1	112.4	103.6	90.0	81.5	87.3
Spain	237 525	217 648	144 618	155 122	165 297	163 464	155 253	205 751	91.6	60.9	65.3	69.6	68.8	65.4	86.6
France	962 583	1 383 325	1 172 553	1 163 793	1 173 885	1 225 816	1 255 668	1 227 974	143.7	121.8	120.9	122.0	127.3	130.4	127.6
Croatia	15 300	14 095	13 575	15 929	17 248	14 051	12 043	13 547	92.1	88.7	104.1	112.7	91.8	78.7	88.5
Italy	1 223 105	1 152 323	944 025	1 038 883	1 066 669	1 099 853	1 121 757	1 045 374	94.2	77.2	84.9	87.2	89.9	91.7	85.5
Сургиѕ	3 191	2 912	1 670	1 687	1 550	1 245	966	918	91.3	52.3	52.9	48.6	39.0	30.3	28.8
Latvia	25 844	29 163	25 659		21 341	20 623	20 578	19 387	112.8	99.3		82.6	79.8	79.6	75.0
Lithuania	29 610	30 379	26 530	27 299	23 478	22 856	21 546	20 121	102.6	89.6	92.2	79.3	77.2	72.8	68.0
Luxembourg	7 021	7 079	7 218	8 775	9 243	10 334	10 259	9 293	100.8	102.8	125.0	131.6	147.2	146.1	132.4
Hungary	127 125	125 247	161 051	157 234	159 047	148 788	132 018	101 677	98.5	126.7	123.7	125.1	117.0	103.8	80.0
Malta	8 525	7 244	7 769	8 520	8 690	8 469	8 198	8 653	85.0	91.1	99.9	101.9	99.3	96.2	101.5
Netherlands	704 160	703 315	662 105	669 680	652 250	644 725	587 210	544 100	99.9	94.0	95.1	92.6	91.6	83.4	77.3
Austria	174 008	170 683	150 728	144 326	146 520	148 861	144 073	136 098	98.1	86.6	82.9	84.2	85.5	82.8	78.2
Poland	214 414	208 194	203 916	230 247	230 751	200 030	160 777	138 166	97.1	95.1	107.4	107.6	93.3	75.0	64.4
Portugal	126 956	121 199	95 064	98 398	102 271	94 902	91 041	86 417	95.5	74.9	77.5	80.6	74.8	71.7	68.1
Romania	41 874	49 398	48 828	47 322	56 732	57 557	164 396	108 439	118.0	116.6	113.0	135.5	137.5	392.6	259.0
Slovenia	28 765	28 566	28 911	30 677	33 905	34 942	30 103	22 798	99.3	100.5	106.6	117.9	121.5	104.7	79.3
Slovakia	33 743	31 549	41 814	37 613	34 730	33 872	29 816	24 091	93.5	123.9	111.5	102.9	100.4	88.4	71.4
Finland	92 999	99 778	99 434	100 501	95 737	101 665	102 166	97 464	107.3	106.9	108.1	102.9	109.3	109.9	104.8
Sweden	436 446	425 878	367 965	380 558	379 494	383 038	385 394	373 130	97.6	84.3	87.2	87.0	87.8	88.3	85.5
United Kingdom:															
UK England and Wales	1 592 758	1 591 975	1 478 601	1 481 675	1 361 329	1 326 649	1 267 915	1 277 897	100.0	92.8	93.0	85.5	83.3	79.6	80.2
UK Scotland	117 033	115 891	107 894	108 956	94 551	95 894	89 598		99.0	92.2	93.1	80.8	81.9	76.6	
UK Northern Ireland	24 380	28 608	23 579	24 480	23 824	25 168	24 806	24 016	117.3	96.7	100.4	97.7	103.2	101.7	98.5
Iceland	4 718	5 589	4 920	4 203	4 147	4 102	3 670	4 032	118.5	104.3	89.1	87.9	86.9	77.8	85.5
Liechtenstein	178	201	174	184	197	233	214	193	112.9	97.8	103.4	110.7	130.9	120.2	108.4
Norway	138 083	145 434	137 543	135 255	141 445	133 302	119 515		105.3	99.6	98.0	102.4	96.5	86.6	
Switzerland	120 817	134 291	161 278	189 520	200 647	184 352	162 168	146 026	111.2	133.5	156.9	166.1	152.6	134.2	120.9
Montenegro	794	656	530	673	857	739	892	827	82.6	66.8	84.8	107.9	93.1	112.3	104.2
FYR of Macedonia	6 627	5744	5 423	5 552	6 034	6 037	5 525		86.7	81.8	83.8	91.1	91.1	83.4	
Albania	3 596	3 577	3 978	4 621	5 344	5 255	7 961	7 187	99.5	110.6	128.5	148.6	146.1	221.4	199.9
Serbia	19 863	17 833	15 912	17 529	17 900	31 680	26 736	22 603	92.1	100.8	111.1	113.4	200.8	169.4	113.8
Turkey	:	174 545	207 945	209 866	239 926	:	:		:	:	:		:	:	
Bosnia & Herzegovina	8 180	6 740	11 362	6 737	6 675	6 477	5 931	4 874	82.4	138.9	82.4	81.6	79.2	72.5	59.6
Kosovo	15 466	13 771	15 234	17 141	16 292	16 962	15 607	12 295	89.0	98.5	110.8	105.3	109.7	100.9	79.5

Note: EU-28 refers to the 28 jurisdictions reporting in all 8 years. Latvia and UK Scotland not available for all years () not available. Source: Furnistat (online data code: crim. off. cat)

Table 6: Theft offences reported in Europe by the police, 2008-2015, Source: Eurostat, on-line data base.

Another factor that affects the pickpocketing data harvesting is the Legislation in every country or city. Some countries consider this illegal activity as an infraction or a misdemeanour. The article 234 of The Spanish penal code, for example, stablished that for a theft act to be considered as a felony, the value of the stolen goods must be at least of 400 euro, although theft specialists in Madrid estimate that there will be at least 800 or 1,000 active pickpockets each day. This kind of administrative gap is one of the reasons that generates mistrust from the citizens to the legal system, giving them another motive for not to report the offence when it occurs.

In these cases, it is important to consider the victimization surveys generated locally by each country. In Latin America not reporting crimes or offences is a common situation, in Mexico during 2018 the 94.7 % of theft offences (10,775 / 100 k hab.) performed in a public area (ENVIPE, 2019) are not recorded directly to the police "due to the lack of trust of citizens in the authorities" (Monroy, 2019), the same happens in Argentina, the 65.3% percent of the personal property thefts during 2017 were not

reported, and the 34.6% of victims declared that is related with the authorities' mistrust (NDEC - National Institute of Statistics and Censuses, 2018). This could be a perfect explanation why Germany or The Netherlands has more reported cases in the last 7 years than most of the Latin American countries inside the data given by the UNDOC. (Table 2).

Although Europe have a more structured public security system there are still some gaps regarding pickpocketing offences records, but they give a clearer idea to understand the level of the problem: In Spain, the 27% of the population claims to have ever been the victim of a pickpocket (CPP 2013). In Italy, following the report elaborated by the Italian National Institute of Statistics (ISTAT) in 2019, the number of pickpocketing recorded offences during the year 2016, attempted or completed, is more than a million and 90% of these cases the stolen value is around 500 euros (ISTAT -National Institute of Statistics, 2019). There was a 10% increase in "theft from a person" offences recorded by the police, to 109,096 in United Kingdom by the end of March 2016

(Elkin, 2019), meanwhile in Switzerland 13,283 pickpocketing offences were reported by 2019 (Brottsförebyggande rådet (Brå) / Swedish National Council for Crime Prevention, 2020) (Table 7)

The Theoretical Paper elaborated by the European Crime Prevention Network on 2017 indicates that cities like Barcelona and Madrid (Spain), Rome and Florence (Italy), London (UK), Amsterdam (The Netherlands), Brussels (Belgium), Paris (France), Athens (Greece),

Prague (Czech Republic), Lisbon (Portugal) have become international nests for this kind of crime. The Crime and Safety Reports elaborated by the Overseas Security Advisory Council (OSAC) indicate that even cities in Asia with a low crime rate such as: Tokyo and Singapore (Street, 2020), have also been affected by this kind of larceny and they suggest to the people to keep an eye on their belongings and put attention inside crowded areas and popular streets and squares

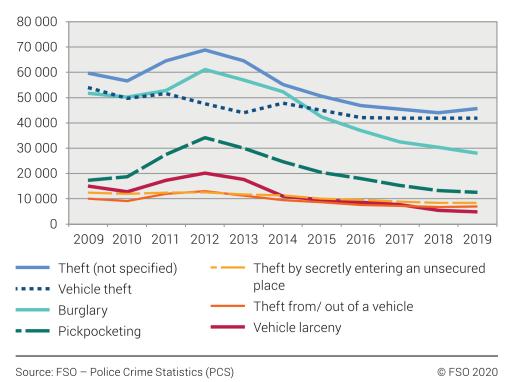


Figure 3: Evolution of the most frequent forms of thefts in Switzerland 2009-20019

1.4.2 PLACE OF THE CRIME (CITY PLACE AND TIME OF THE DAY)

Pickpocketing is concentrated in metropolitan areas. Victims of property crime are more numerous among residents of central metropolitan areas (6.5%) than peripheral municipalities (4.5%) Is important to remark that 90.8% of the pickpocketing offences are performed in the central municipalities inside the metropolitan area. Cities with more than 50,000 inhabitants have higher rates for

crimes against individual property (4.3%) than medium and small size municipalities (2.5 and 2.4% respectively). (ISTAT, 2019).

Pickpockets have a clear idea of where to carry on their improper duty. The CPP report enlisted the 5 most common places where those criminals can be found:

1. Public Transport

Pickpockets normally take advantage of the rush hours, the metropolitan environment polluted by distractive factors that can make a person to be more vulnerable; The high amount of people inside buses or trams create a perfect scenario for them to perform.

2. Crowed Public Areas

Cities centers, museums, touristic areas, main squares and avenues; are normally full of people building an ideal context for the pickpockets.

3. Restaurants, Bars and Coffee shops

In these kind of locations people do not go alone; they are usually in the company of family or friends. It is quite common to lose the focus on their belongings leaving them exposed to the criminals.

4. Fairs, Festivals and Events

Yearly festivals are fundamental for the pickpockets to improve their strategy. Holidays, parades, and concerts had a designated data in the calendar or, in the case of the concerts, are advertised with at least 2 months of anticipation.

5. Street Markets and Malls

Thieves take advantage of these situations because his victims shown where their wallet or money is, and they open the bag or purse with regularity (CPP S.A.U., 2013)

A very high proportion of pickpockets (67.7%) and thefts without contact (56.8%) in Italy occurs during daytime, between 9 and 18 hrs.

The 37.2% of the pickpocketing crimes are made on public transport, markets or in places where crowds are formed; non-contact thefts occur mainly in schools, workplaces (adjacent spaces) or entertainment locations (stadiums, swimming pools, gyms) but also on public transport, parking lots or stations. There was 28.1% of cases where pickpockets mainly took advantage of crowded places and moments of distraction of victims (21.4%) in addition the 12% of them approach to their victims with an excuse (ISTAT - National Institute of Statistics, 2019).

In Spain, 28% of the victims said they had suffered it in a hotel establishment (bar, restaurant or hotel), 27% in public transport and 21% inside a store, shopping center or market, following 14 \$ in festivals or street events and 9% tourist attractions (CPP S.A.U., 2013).

The "Mobile Theft & Loss Report" made by Prey Inc. stablished that the 27.69% of the pickpocketing cases reported by the users of the platform, occurs on the street meanwhile the 20%, on public transport; Schools had a 17.58% of the cases followed by workplaces with a 12.09% (Prey Inc., 2020.).



Figure 4: Locations shown represent the top 4 places with the highest percentages/chances of having pickpocket occur from 2018-2019 (Prey Inc., 2020).

1.4.3 VICTIMS

When we are talking about victims of pickpocketing is easy to arrive to the conclusion that tourists are the most affected ones. These victims normally report their thefts to the local police stations, while three hundred more of them do not even file a report for the lack of time, late discover or maybe other reasons (European Crime Prevention Network, 2017) making almost impossible to track the impact of the problem. The ECPN conclude that thousands of tourists have suffered this kind of larceny advising people to be aware every time. On the other hand, is extremely important not to forget about the local victims. In some countries the number does not show a remarkable difference of the percentage between male and female reported victims. Women (2.7%) state that they were victims of pickpocketing about as often as men (2.6%) in 2019 (Brottsförebyggande rådet (Brå) / Swedish National Council for Crime Prevention, 2020); in Italy, the 1.8% of the victims were woman meanwhile 1,3% were male victims, these slightly differences may exist due woman carrying bags or handbags with them.

In Spain, on the other hand, the percentage were clearly differentiated; the 19% of men versus 34% of women; and could change depending on the place were the act was carried out: Women claim to have been stolen from more in bars, cafes, etc. (30% vs. 24%) and in shopping areas (27% vs. 14%) than men; On the other

hand, men declare to have been victimized in points of tourist interest (15% vs. 6%), popular festivals or street events (14% vs. 10%), and sporting events (3% vs. 0%) than the woman. (CPP 2013).

The numbers also shown that the most affected are teenagers and young adults. Age-bracket goes from 15 to 25 years old followed by the 25-34 age group. A shocking figure given by the Crime Survey for England and Wales (CSEW) estimated that around 1 in 10 children aged 10 to 15 years were victims of at least one crime in the latest year, where 30% of those crimes were thefts of personal property (239,000).

The CPP made a survey that could predict the potential victims of a pickpocket based on the level of attention (Chapter 1.3) that can be influenced by the usual way of thinking: 73% of victims declare that they can imagine things in a clear way compared to 69% of those who are not victims. 89% of victims between the ages of 18 and 24 claim this, compared to 69 % of the 45-54 group. 78% of male victims claim this compared to 70% of female victims. Another measured factor was the emotionality where 51% of victims say that they can daydream when compared with 44% of the non-victims. 64% of the 18-24 age bracket assure this compared to 35% of the group 55-65. 53% per cent of female victims claim this compared to 46%. 52% of victims say they are easily moved, compared to 44% of non-victims. 65% of victims between the ages of 25 and 34 claim this, compared to 37% of the 55-65 group. (CPP S.A.U., 2013).

1.5 PREVENTING PICKPOCKETING

In order to prevent possible unfortunate events, the EUCPN list some advices that could help citizens from all over the world to be more aware and careful during their daily routine:

- -Keep purses secure and carry wallets in an inside pocket, be careful with wallets in the back pocket of your pants.
- -Zip up hand and shoulder bags and carry them in front of you with flaps against your body,

keep straps short and bags tucked under your arm.

- Do not display jewelry or show money, let personal papers that you do not need with you at home
- Do not walk around with large sums of money and make maximum use of bank cards, spread your money across different pockets.
- Close your jacket when you are in a crowded place. Pay attention if you are approached by a stranger.

- Always close your bag. Ensure that the zipper or locking system is against your body. Carry your purse on the side of your partner, keep your luggage safe close by and in view, check on your bags regularly.
- Do not leave valuable items unattended on a train when you visit the toilet or buffet car. If you are going to sleep on a train, do not leave valuables in view on the table or seat next to you. Keep them hidden.
- Ensure any bags placed on the floor are in front of you, so that any movement of the bag will be noticeable.

- -Protect your gadgets, install a tracker application on your smartphone, which could help trace your device if it is stolen. Always use your phone's security lock or PIN number.
- Stay alert and aware of what is going on around you when using your phone in public.
- It is more likely to recover your property if you have marked it properly.

1.6 HOW DO PICKPOCKETS OPERATE NOWADAYS?

Theft professionals

Pickpockets consider these actions as their profession where their workdays and working hours are those when the streets and the public spaces are filled by people. Some pickpockets take advantage of the rush hours inside the public transportation. They normally wait until the potential victim try to get on or off the vehicle, or, in the case of the metro stations, at the beginning or the end of the electric stairs (CPP S.A.U., 2013). Some others benefit from the weekend's activities in the main squares, parks, and avenues (Chapter 1.4.2) Tourist and visitors, but not only them, became an easy victim for these felons, they create or wait for a distraction (Chapter 1.3) followed by a small disorienting force that puts the victim off balance, allowing any unusual movement, caused by the extraction, to go unnoticed when they seize the victim possessions, pickpockets can be very skilled with their hands (Yeager, 1990). Cutting people's garments and accessories is another common technique, using razor blades or wire cutters to pass trough the rough fabric of jeans or leather "... cut the straps of the purse and make off with it before the lady notices it" (Yeager, 1990).

Pickpockets are high skilled with hand techniques, as it shown at "The Art of Misdirection" (Chapter 1.3) This allow them to appropriate people belongings from their pockets or bags even if they are closed, they can easily pass-through zippers and fasteners (Annex 1) or if they are hidden (Annex 4).

They normally do not have a regular job and their incomes depend on their illegal activity and how fast do they manage to re-sell the stolen products on the black market. (CPP S.A.U., 2013) "Smartphones may have overtaken wallets as the most pickpocketed item, and even a disabled iPhone can fetch \$200 on the black market (new screens are a particularly desirable part)" (Chun, 2019). Pickpockets are mainly focused on victims with cash, but it may be some occasions where they use the stolen credit cards to charge small or big value transactions "...They made a payment of \$ 200,000 pesos (8,000 euros)" (Annex 1) Pickpockets are very organized and methodic both alone or in group, they know their targets, risks and everything that could affect their "sector" (CPP S.A.U., 2013).

Legislation's gaps experts

As mentioned before these criminals are aware about the leaks inside the Legal System (Chapter 1.4.1): The constitutional punishments. In order not to obtain more severe punishments, pickpockets tend not to be violent against

their victim, in this way, they actions will be still consideration as a fault or a misdemeanor, leading them to repeat their acts without concern of being caught (CPP S.A.U., 2013); The lack of crime reports from the victims. They take advantage of it knowing that they will not be caught by the police or they would set free in a short time.

Masters of disguise

A pickpocket tends to adapt their clothing depend on the area he is going to carry on with his activity. At the touristic places, they pretend to be another tourist, holding backpacks, cameras, or city maps, in this way they approach to the real visitors without creating any suspicious. Those who can be found at the mall, carry around with shopping bags; Sometimes they pretend to be a lover's couple on a date or a lonely man that is siting reading the newspaper, but this is another way to scan the perimeter without being noticed (CPP S.A.U., 2013). Pickpockets can use different reason in order to approach their victims, sometimes is accompanied by an excuse like asking for information or by offering their help. In some cities, pickpockets stained the jacket or sweater of the victims so they can offer to clean them and stole from them. In some countries minors are trained to do this kind of job to. Anyone could be a pickpocket, they just need to practice (Yeager, 1990).

CHAPTER 2: WHO ARE THE MOST EXPOSED ONES?

MARKET ANALYSIS AND SEGMENTATION

For an ideal product elaboration that could suit the necessities of the users in a right way, it is important to analyze their background and context. Even though everyone is a potential victim for pickpockets, the data collected on the previous chapter indicates that there are users with a higher percent of possibilities of being pickpocketed. The market analysis in this chapter will be carried out taking as baseline that data, focusing on the geographic position, demographic features and lifestyle variables retrieved from different sources of desk research and field research (surveys and interviews).

2.1. GEOGRAPHIC SEGMENTATION

The EUCPN listed the most affected cities in Europe (Chapter 1.4.1). What does these cities have in common? They attract a big number of foreigners due their globalized opportunities they have to offer (tourists, international students, worldwide industries) this features make a city more desirable for people all over the world. Being in a city full of distractions may people being careless about their personal belongings. "For this reason, Paris, London, New York and every other international tourist spot are all profitable spots for the professional booster" (Yeager, 1990).

Cities also had to offer, besides jobs, different activities and recreations that allow the user to have a busier and more stressful routine. A large amount of people uses public transport to get to their jobs or any other activity, something that cannot be found in little towns. Population density plays and important role, criminals have more possibilities of finding a potential victim inside a dense urban area than and empty rural one. Information flow inside the cities permit to the felons to learn about people preferences or new ways to commit their illegal activities. Finally, is easier to find a black market where stolen objects and criminal implements (guns) are the main distribution assets (Glaeser & Sacerdote, 1999).

2.1.1. CLIMATE

Weather became an important element for the pickpockets. People's wardrobe change depending on the seasonal period "I use my ski jacket because it has several internal and external pockets in it, and I can distribute all my personal goods inside it..." expressed one of the interviewed victims (Annex 4) During winter, people may use heavier outwear like coats and jackets that made more difficult, but not impossible, for a pickpocket to seize for the mark belongings, because they train themselves to get access inside different clothing typologies (Yeager, 1990).

Furthermore, during the warm seasons, people do not wear heavy clothes with inner pockets to put their belongings "...It is easier for the pickpockets to stole from you on summer, you barely have clothes on you..." Declares one victim based in Barcelona (Annex 4) This may become a major issue inside cities where the weather is constantly warm during the year, like Latin American countries.

In these cases, some people rather use comfortable little accessories in order to carry around their personal goods. On the other hand, some users and victims had expressed that they do not feel comfortable to use extra accessories due their aesthetics or because is more complicated to monitor more than one bag (Annex 2) and some others found way more comfortable using the pockets of their clothing.

2.2. DEMOGRAPHIC VARIABLES.

Based on the numbers of Chapter 1, the most affected age bracket goes from 15-35 years old that belong inside of Generation Z and the Millennials (Generation X). To understand the reason of why they are the most affected parties it is crucial to understand their lifestyles and routines to identify the weak points of the scenario and the consuming preferences. The Table 9 shows the differences between both generation groups.

Demographic Segmentation									
	Gen Z	Millenials							
Age Bracket	12 to 25	26 to 35							
Life Stage	Dependent or Pre-Adults	Pre-Family or Family							
Occupation	High School- Collage or/and Part-time	Collage or/and Work							
	job								
	Lifestyle Segmentation								
Orientation to life	Explorative, Cognitive and Multitasking.	Shared, experimental							
		and sometimes selective							
Priorities and aptitudes	Personal talent to experiment,	Education, professional affirmation, success and							
	Cultivation of talent,	prosperity.							
	Education and Self-realisation.								
Contexts of reference	School, Sport and Friendship	Work, urban, professional and domestic							
Passions	Music, aesthetic experimentatio,	Technology , information, innovation, brands,							
	Blogging, reading, writing, style and	fashion, home, wellness, tourism and style.							
	social activities, creativity and social								
	network								
Mobility	Public transport and shared mobility.	Personal transport, alternative transport (public and							
		sharing).							
Consumption	Performative aspects with a touch of	Global nomads, portable products and accessible							
	originality.	services.							
	Real life experiences trough an	Digital and Real Life integration.							
	unexpected moment.								
	Online and Offline co-existing.								
	Entertainment, music, clothing and								
	body care.								
Retail	Experimentational contexts and original	First hand experimentation of new innovational,							
Retail	product combination.	customized and multifunctional products and							
	Customized product seekers.	services.							
	custoffized product seekers.								
		Technology enthusiast, smart objects and apps to							
Comunication	Analog and digital platforms	simplify everyday life.							
Comunication	Analog and digital platforms.	Shared cultural knowledge. Brand relationship trough new models and							
	Research for privacy and inspiration								
	trough different channels.	transaccions, more than just a shallow relationship.							
	Inclusive peers and permanent dialague								
	and support trough digital channels.								
	Mostly related on influencers than								
Tech Devices	Smarthphones, computer, headphones,	Smartphone, Tablet, computer, digital gadgets,							
	cameras, tech gadgets								

Table 7: Generational differences and segmentations between Millennials and Generation Z

2.2.1 WORK AND OCCUPATIONS VARIABLES.

Age differences normally set a great difference between user's routines. First of all, routines for generation Z, being a younger generation, are more directed towards and scholastic environments, either be high school or college, with some extracurricular activities such as sport teams, study clubs and digital and real-life social groups (Morace, 2017). On the other hand, Millennials are work-focused generation, immerse in their career development and educational and cultural experiences in a higher level (Morace, 2017).

Routines are directly linked to the goods and accessories that user take with them during the day. For example, a student will probably bring a certain type of accessory to school meanwhile a worker will bring another typology. During a series of interviews made by the author, some users expressed that they will based their bag typology selection on the number of articles they have to bring "if I have to carry on a few notebooks, pencils or chargers I will take the drawstring bag, if I have to take the computer with me, I prefer the backpack or the messenger bag..." expressed one student (Annex 3) "I bring a backpack to carry them, I rather to have a carrying accessories that has a lot of compartments in order to be easy for me to move because I always carry around a lot of stuff and it becomes difficult to track..." mentioned another interviewed student (Annex 2).

On the other hand, workers face different variables, the items carried by the workers vary according to their work field, required tools, policies of the company and job title: "Inside I carry the laptop with its charger, sometimes the iPad, because I take notes with the iPad. Sometimes are fast together and I take only the tablet and the personal bag, respective chargers, pen and a notepad." Expressed one of the interviewed users (Annex 1). Users tend to combine their outfits with their accessories "I take a bag that is more presentable for work, I have different models to match the colours..." (Annex 1).

2.2.2 LIFE STAGE

Everyday life is different for every person, life stage can mark a great difference. The routine of an adult inside the family lifecycle, would be different from a dependent student. Some millennials inside the 30 to 35 age bracket are more focused on the research of products and services that would help them to develop family environments, work and self-realization all together (Morace, 2017). On the other hand, there are other Millennials that prefer to be out from the family nest, focusing specifically on their personal goals and career developments.

Gen Z seem to be ever more aware of the social dimension, transitioning from education to work and troubled for their socio-economic situation, but building their own aesthetic identity, sure of their originality and willing to express it. They are more pragmatic and less self-indulgent, they are aware of how challenging existence can be and how important daily commitment is, this generate them stress, hypersensitivity and sometimes depression (Morace, 2017). This mental conditions can lead to be more distracted, giving to this age bracket group a major possibility of becoming a victim of pickpocket (Chapter 1.3).

2.3 LIFESTYLE SEGMENTATION

2.3.1. TRAVELING

Tourists have more possibilities of being victims of a pickpocket and these generation groups are considered as global nomads in the constant pursuit of intercultural and cosmopolitan experiences (Morace, 2017) They are constantly traveling, doing weekends gateways, national and international trips related to work, studies or recreations. Considering that pickpockets usually operate in touristic areas, this may be a crucial factor for these age groups being the most affected parties.

Millennials are the age group that travel the most of all the age groups, taking 35 days average and the 77 % invest their free time traveling, a larger number than the 62% of baby boomers; 19% take international trips, the opposite of generation X; 13% of Millennials are more attracted to visit historical and cultural sites. Regarding travel companion, 96% of Millennials have no issue to travel by themselves, when they travel with partners of friends, they tend to look up for more adventurous trips. Those one with families, on the other hand are more likely to choose family-friendly activities, parents with children below the age of 5 travel at a rate of 62%. 45% of Millennials expressed that their main reason for traveling was self-discovery trying to avoid any kind of unforeseen issues (Widmer, 2020).

Generation Z, prefers to go to cities more than other groups, limited by the economic position, considering that they are still inside a dependent life stage cycle, they tend to visit well-known and accessible cities, making their trips with the goal of having adventures and spending most of the time abroad. After Millennials, Gen Z takes the longer vacation period (29 days); 56% travels to visit their relatives (Widmer, 2020)

Inside these travelling scenario variables, baggage typology chosen by the users play an important role when talking about pickpockets' threats, also here there a lot of factors that influence those decisions. Interviewed victims declared that it became more difficult to focus in more than one bag while traveling (Annex 2) Some of them declare that sometimes they have to take their work tools in case they need to work during a long trip or they take with them their electronic gadgets, like video-games console or tablets to keep them entertained during the trip (Annex 2); Some others make their choice based on family reasons "...and also a backpack if have to bring the things for my son: toys, snacks, diapers." Expressed one of the interviewees (Annex 5). Most of the female interviewees rather to bring a small bag to have their Smartphones, money and documents close to them and easy to access (Annex 1). Place of destination also affect the user decision "... If I go to the beach I have to take with me a beach bag..." (Annex 1).

2.3.2 MOBILITY

One thing that several cities affected by pickpockets have in common is the public transportation network, being Public transport one of the red zones where pickpockets operate (Chapter 1.4.2). Taking Italy as a point of reference, the 86.8% of the employees and the 71.5% uses public transport (Figure 5). Among those employed, the percentage of those who only use the car to travel exceeds 80%, 82.5%as a driver, follows the bike with residual shares, 3.1% (ISTAT - National Institute of Statistics, 2018). From 14 to 24 years of age students use urban or suburban public transport more often: The 37.7% of 14-17 and the 24.1% of 18-24 age brackets travel by bus between different municipalities, meanwhile the 17.1% from the 14-17 age bracket and the 18,5% from the 18-24, travel by tram or bus in the municipal area (ISTAT - National Institute of Statistics, 2018).

From an ecological perspective, governments and societies are making awareness new mobility solutions like Shared Mobility,

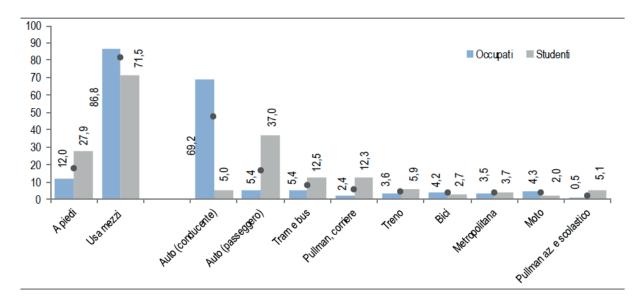


Figure 5: Student and employed by means of transport used to reach the place of study or work. Year 2017, for 100 people with the same characteristics (ISTAT - National Institute of Statistics, 2019)

Pooling and alternative transportation "It is about all kinds of transportation on wheels, like the scooters we already see on the streets all around the world. The main idea of low-tech transportation is to be able to use body energy to move around. It is totally eco-friendly and renewable" (Lang, 2019). Sustainable mobility choices are more frequent in municipalities in the center of metropolitan areas, mainly due to the increased incidence of people moving on foot to the place of study or work (24.5%) or

using only collective means (22.8%); the bike is mainly used in municipalities of over 50 thousand inhabitants (3.2%). (ISTAT - National Institute of Statistics, 2018). Employed women choose more sustainable modes of mobility: the 14.8% go to work on foot; 2.0%, by bike and the 9.6% by public transport. The young and the more educated people travel more by public transport or by bike (ISTAT - National Institute of Statistics, 2018).

	MOBILITÀ ATTIVA		SOLO MEZZI PRIVATI			SOLO MEZZI PUBBLICI	MEZZI PUBBLICI E PRIVATI		
	Totale	A piedi	In bici	Totale	auto/moto	auto come passeggero			
Occupati									
Maschi	11,9	10,0	1,8	77,1	72,7	4,4	4,7	3,9	
Femmine	16,8	14,8	2,0	68,7	63,1	5,0	9,6	4,5	
Fino a 24 anni	16,0	12,3	3,7	65,7	53,6	10,2	10,9	7,5	
25-44 anni	12,3	10,6	1,6	74,6	70,1	4,7	7,6	4,5	
45-64 anni	14,6	12,7	1,9	74,0	69,3	4,1	6,2	3,6	
65 anni e oltre	28,1	24,3	3,8	62,5	56,1	4,6	7,0	1,9	
Dott. di ricerca o laurea	13,6	11,5	2,2	69,2	65,2	3,2	10,5	7,0	
Diploma superiore	13,0	11,2	1,8	76,0	71,8	4,2	6,1	4,0	
Fino alla lic. media	15,4	13,5	1,9	73,5	66,8	6,4	5,9	2,2	
Studenti									
Maschi	29,3	27,7	1,6	39,4	5,3	33,1	26,0	6,0	
Femmine	29,2	28,2	1,0	37,2	4,4	32,5	27,4	6,3	
Fino a 14 anni	36,4	35,4	1,0	47,4	0,7	45,9	13,9	2,3	
15-17 anni	18,5	16,8	1,7	20,4	3,3	16,1	53,1	9,1	
18-24 anni	16,4	14,9	1,5	23,1	14,5	9,0	46,7	14,3	
25 e oltre	17,2	14,6	2,6	35,3	30,8	3,0	31,8	16,7	

Table 8: Students and employees by mobility choices and main features. Year 2017, for 100 people with the same characteristics (ISTAT - National Institute of Statistics, 2019).

Those users who use alternative transport, are forced to carry their personal belongings throughout the city without having a specific place to store them, unlike car owners that use the car trunk as a mobile personal storage "...I used to put my bag in the trunk of the car to avoid people opening the car to steal it..." (Annex 2) Furthermore, for alternative transportation users (such as: bike, skateboard, in-line skates, etc.) it is important to bring their protections in order to go around the city "When I am going skateboarding, I take the skating gears, tools and the helmet inside the backpack" (Annex 3).

2.3.3 PRODUCT AND SERVICES CONSUMPTION PREFERENCES

To create a desired product for the market, it is necessary to understand the consumer behavior of these age groups, consumption and routines define what people carry with them during the day, and this leads to understand which carrying items they use. Millennials and Gen Z have both a deep interest in new experiences.

To create a desired product for the market, it is necessary to understand the consumer behavior of these age groups, consumption and routines define what people carry with them during the day, and this leads to understand which carrying items they use. Millennials and Gen Z have both a deep interest in new experiences.

Gen Z look for artistic creativity, shared fun and real-life experiences, directs their consumption towards entertainment and music, but also clothing, body care and wellness. For them fashion meets art and graphics are integrated with design. They do not desire their own car and they always fasten their seat belt. (Morace, 2017). In the social, some of them avoid the excesses of the nightclub, preferring meetings and events such as sober parties, where one participates with music and creative writing. They are oriented towards sobriety, they tend not to drink, they do not smoke, practice safe sex (Morace, 2017). The data given by the Office for National Statistics (ONS) showed that Gen Z consume 20% less alcohol than millennials. However, 9.9% of the 16-24 age bracket, consumed at least one drug at month, usually cannabis (Hymas, 2020). They are the first generation to be born inside the marijuana legislation era (Ayesh, 2019).

Millennials are more focused on problem solving, searching for new business and lifestyles. They search for authentic and good quality products and services that could offer the most satisfactory and suitable experience for their needs, taking advantage of the technology using apps and smart objects to simplify their day-to-day routines (Morace, 2017). They are considerate as world nomads; therefore, they are constantly searching for portable and accessible solutions in the market. Design became an important element for them towards acquisition of a new product (Morace, 2017). Millennials are also concern about wellness and fitness; 76% percent of them exercise at least once a week, compared to 70% of Generation X and 64% of Baby Boomers (Rachel, 2019).

Regarding nightlife habits, Millennials start to going out less than the previous generation, preferring to be at home watching series on streaming or having little reunions (Marsden, 2018). Is important to highlight night life because bars and nightclubs are examples of places where pickpockets operate, taking advantage of the clients being under the influence of alcohol "I had my phone inside my bag because I was a little bit drunk and I didn't have to many pockets because it was summer..." Exclaim one of the interviewed pickpocket victims "...It was a bag that didn't close very well but I put a jacket over it to cover to avoid someone could reach for my personal belongings. But nonbeing so conscious i couldn't realize who reach for my bag, unfortunately I don't remember what happened." (Annex 4) In these scenarios, people normally use to wear an specific type of outfits, more formal or cocktail style, therefore they tend to pick a matching carrying item "I prefer not to bring a bag, to have everything under controlled inside my clothes pockets, if I have my stuff in the jacket, I always keep the jacket with me even if I'm not wearing them." (Annex 4).

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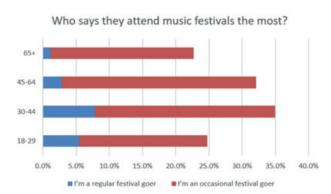


Figure 6: Music festival attendance by age group.

Furthermore, Millennials they are the major Rave and Music Festivals consumers together with Generation X (Figure 6). The top five 2019 music destinations among this age bracket were Coachella 4.5%, Lollapalooza 3.6%, Austin City Limits 3.0%, Burning Man 2.7% and New Orleans Jazz Fest 2.5% (Marzilli, 2019). This became an important element to consider because music festivals turn to be a hotspot for pickpockets to operate "...around one in every 500 visitors will be a victim of crime with a staggering £270,000 reported stolen from revellers last year alone" (Glanfield, 2016).

2.3.4 TECHNOLOGICAL BEHAVIOUR

Gen Z and Millennials are the major smartphone users, their way of getting informed and keeping updated passes through social media. Meanwhile Gen Z grown up without distinction between the web and physical world, becoming multitasking by shifting their attention from different activities in short time, using their phone while they carrying out another different activity (Figure 8). Millennials, on the other hand, lived the transitions between the digital era, making them both a technology enthusiast generation, they integrate all things digital

into their lives and make smartphones and apps tools to work with and make purchases (Morace, 2017). The 18-24 age bracket, check their phones 86 times a day, and their group represents the highest percentage increase across all generations (DTTL - Deloitte Touche Tohmatsu Limited, 2017). This behaviour leads to think that this may be another reason why this generation are more exposed to distraction therefore to be pickpocketed. Regarding IoT and Wearable Technology, it seems to be a change of mindset of users. On 2017 the interest of connected smart products have been raising since 2015 (Figure 9).

Thinking about "wearable technology," which, if any, of these devices would you be interested in?

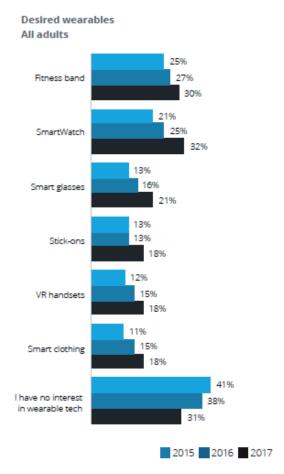


Figure 7: Desired wearable technology for all adults. Years 2015 - 2017 (DTTL - Deloitte Touche Tohmatsu Limited, 2017).

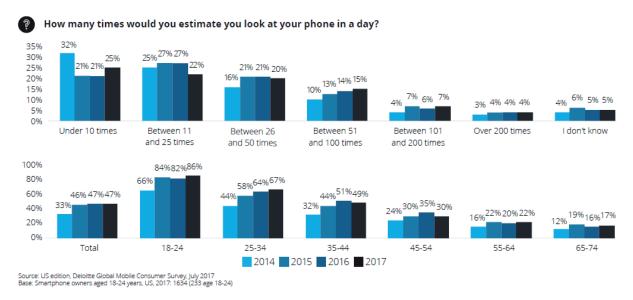


Figure 8: Estimated user screen time percentage from 2014 – 2017 (DTTL - Deloitte Touche Tohmatsu Limited, 2017).

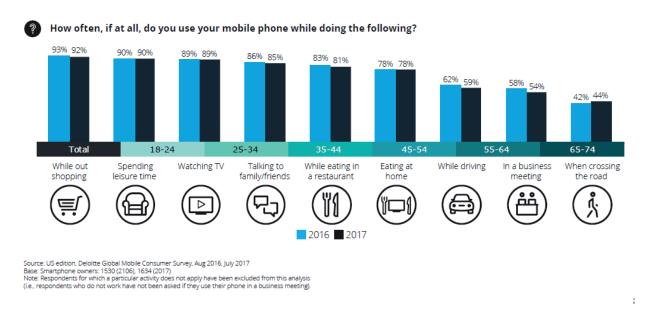


Figure 9: User's smartphone usage while carrying out other activities. 2016-2017 (DTTL - Deloitte Touche Tohmatsu Limited,

2.3.5 GAMING AND GAMIFICATION

Gaming is projected to be a \$94 billion industry by 2024 with 90% of Generation Z inside of it. The New Heartland 2020 Generational Study shows that the 42% of the users from Generation Z choose gaming as one of the top three activities becoming a new social network (Jankowski, 2020). Some students and workers tend to miss work or school in order to keep playing their videogames. Almost 15% of the students and 6% of workers declare to have

been consistently skipped school or work to keep playing Fornite; 20% of students and 16% of workers, declared to do the same but not that often (Brown, 2018). The 2020 pandemic the 42% of Generation Z spent more than 2 hours of their day playing some kind of videogame. "The allure of video games has always been there: the ability to escape reality and engage in activities you normally wouldn't or couldn't engage in..." (Jankowski, 2020). Generation Z look for brands that reflect and understand their values and lifestyles, 56% find this to be an essential matter (Jankowski, 2020) "Users don't

need new stuff to do, they need new technologies to support doing the stuff that already matters to them..." (McWilliams, 2009)

Commercial brands are starting to notice and taking some action adapting Gaming strategies inside their business models by either pursuing partnerships or sponsorships with gaming events or facilitating or enabling gaming behavior (Jankowski, 2020). Inside Fashion industry some examples can be found, such as: The Louis Vuitton and League of Legends capsule collection collaboration (LVMH - Moët Hennessy Louis Vuitton, 2019) and The North Face – Gucci – Pokémon Go collaboration (Guccio Gucci S.p.A., 2021).

PERSONA 1: CARLOS MARRUFO

Archetype: The geeky student / The Cyber Explorer



Distracted

Inventive

On-line extrovert

Real-Life Introvert

"I really wish I could find a way to carry around all the my stuff without look like a dork"

Age: 23

City: Mexico City, Mexico. **Lifecycle:** Parents dependent

Occupation: New Media Artist Student

BIO:

He majorly uses public transport to go to university sometimes he is accompanied by his father. He uses his backpack to carry around his tech gadgets, personal belongings and, often, his skateboard. Occasionally when he is overload, he uses, in addition, a messenger bag to carry their extra items (books, lunch, etc.). In his free days he rather uses his backpack half empty or his clothing pockets to carry his items.

TRANSPORTATION METHOD:







Shared

Alternative

CARRYING ACCESSORIES:







Backpack

Messenger Bag

Pants Pockets

GOALS:

Have a better way to transport their belongings. He wishes to find a functional carry item that offers protection to his belongings and that also fits with his aesthetic preferences.

FRUSTRATIONS:

Got pickpocketed: Inside the metro and at school. Gets distracted by: His phone and his Nintendo switch inside the public transport, He finds difficult to focus on his belongings due the quantity of bags he often carries.

He does not like anti-theft accessories because he said that they made him look like a dork, he hasn't find a nice accessory for his belongings that he likes

Drawing 1: User Persona 1

PREFERRED CHANNELS:

- Youtube
- Twitch
- Discord
- Twitter

TECH GADGETS:

- •Smartphone: Huawei P40
- Laptop: Alienware M15 Ryzen Edition R5
- Nintendo Switch
- Headphones.

PERSONA 1: ASHLEY FODJER

Archetype: The working mother / The Warrior Queen



Creative

Practical

Multifunctional

Ambitious

"I really wish I could have something to remind me where I had put my phone."

Age: 35

City: Berlin, Germany

Lifecycle: Married, Mother of 1

Occupation: Owner of her Urban Fashion Atelier

BIO:

She has 1 little girl and a dog to take care along with her husband. She spent most of her work journeys on the phone. She is open to experience new brands, but it must fit her needs and help her solve more than one problem. She likes to acquire cutting edge articles with original designs. She constantly makes inspirational travels and new suppliers. She likes to travel to different countries during her holidays.

TRANSPORTATION METHOD:







Shared Alternative

CARRYING ACCESSORIES:







Handbag

Computer Bag

Mini Bag

GOALS:

She would rather carry their belongings during her free days inside her pants, but the pockets are quite small, so she need to carry a mini bag.

She loves to match her outfits with their carrying accessories.

FRUSTRATIONS:

- Got pickpocketed in: At the airport and in a touristic square.
- Gets distracted by: A full workload routine and phone calls. She is always very busy; she constantly forgets to close their bags and zippers.

She does not like to change all her stuff from one bag to another, she said that she waist a lot of time. She has some troubles to find the right accessory because do not fit all her demands, like the material or the size.

Drawing 2: User Persona 2

PREFERRED CHANNELS:

- Gmail
- Pinterest
- LinkdIn
- Facebook

TECH GADGETS:

- •Smartphone: iPhone 12 pro Max
- •Laptop: Apple MacBook Pro 16" (5th Gen)
- •Tablet: Apple iPad Pro 11" (4th Gen) 2020

PERSONA 3: RODRIGO DEL TORO

Archetype: The Party Hunter / The Self-centred Hero



Social

Vain

Fashion Victim

Funny

"Even though I will never stop partying, I really regret lose my phone all the time".

Age: 31

City: Barcelona, Spain

Lifecycle: Single, Independent **Occupation:** Visual Merchandiser

BIO:

He travels around the world hunting raves and parties. He does not like to wear anti-theft accessories because do not match with their style. He acquires new accessories letting him follow the hype of trends and fashion, he does really know how to match his tech gadgets.

TRANSPORTATION METHOD:



Public



Shared



Alternative

CARRYING ACCESSORIES:



Box Mini Bag



Weekender Bag



Cross body pouch bag

GOALS:

Have more stylish and practical accessories. An easy way to report their crime when he is on holidays.

FRUSTRATIONS:

- •Got pickpocketed in: In a rave, a Nightclub and inside the metro.
- Gets distracted by: He has lost 3 cellphones in the parties tough he was drunk, and he didn't realize when it was taken. He runs out of battery inside the parties.

Drawing 3: User Persona 3

PREFERRED CHANNELS:

- Instagram,
- Spotify
- Amazon
- Airbnb,

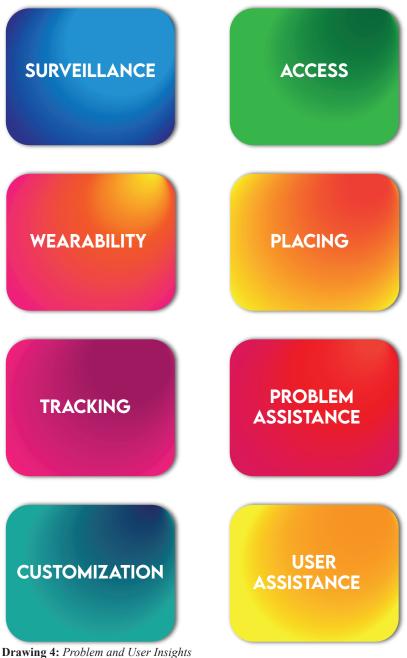
TECH GADGETS:

- Smartphone: Samsung S10
- Tablet: Microsoft Surface Pro 6
- iWatch

CHAPTER 3: MARKETING ANALYSIS AND DESIGN BRIEF DEFINITION STATE OF ART AND PRODUCT RESEARCH

3.1 PROBLEM INSIGHTS

Is quite clear that Pickpocketing has a large number of possible scenarios depending on several elements related both to the problem itself and to the users. In this chapter an exploration of existing products on the market will be made, in order to classify the existing Problem and User Insights found during the development of this document. These insights will help to benchmark the existing products features to generate a new and more adequate design proposal. These Insights are based on the characteristics of pickpocketing: How do pickpockets operate (Chapter 1.5), demographic and lifestyle variables (Chapter 2) and victims' feedback (Annexes).



3.1.1 SURVEILLANCE

On-user monitoring. Avoid any misdirection by redirecting the attention to the belongings.

As mentioned in Chapter 1.3, distraction became the best ally for these felons, any problem variable related to the misdirection of the use will be clarified inside this Problem Insight. Surveillance is defined as "close observation, especially of a suspected spy or

criminal" (Heacock, 2009) Close observation, or attention, is what the user needs to keep control to their personal articles. It seems quite difficult for every user to stay focused on their belongings all the time, it became an almost impossible task to carry out.

Steve Mann, a Canadian engineer specialized in wearable computing, exposed: "shouldn't a person have the right to protect their own body the same way they protect a building"

Surveillance	Problem Insights	Problem Shifting
On-user monitoring. Avoid any misdirection by redirecting the attention to the belongings.	Pickpockets misdirect user's attention in order to take their property	
	Users are easily distracted because they are focused on their short-term goals and routines.	
	Distraction can be also external (noises, lights, people, publicity, media) the bigger the cities the higher the number of distractions sources.	
	Pickpockets operates in noisy environments and crowded areas (Public transport, streets, malls, restaurant, bars, hotels, nightclubs).	1 Re-direct the user attention to the
	Victims sometimes do not realize when they are been pickpocketed.	. personal belongins
	Pickpockets operate mostly in groups and several times they are in disguised as civilians to mislead the victims with different tricks.	
	Stressed out users are more distracted and have more probabilities to get pickpocketed.	
	Some users leave their belongings unattended in recreational spaces because they are distracted or under the influence of substances.	
		Wearability consideration.
	Pickpockets can cut the pocket or bag to steal the belongings that are inside.	1 Re-direct the user attention to the personal belongins.
		Tracking Cosideration
	Users may got distracted when they are carrying more than 2 bags.	1 Re-direct the user attention to the personal belongins
		Customization Cosideration
	Users forget to close their bags and pockets.	1 Re-direct the user attention to the personal belongins (in this case to close the bag)
		Access Consideration
		Tracking Cosideration
	The bag can be easily open when the owner is not closeby. The pickpocket may have the time to open the lock.	1 Re-direct the user attention to the personal belongins.
		Access Consideration

In this context he was refereeing to a camera surveillance system. A camera should not be the only solution for monitoring user's personal goods, user could play the role themselves. they only need to eliminate or ignore the distraction they have been put in or to control when the belongings are facing a potential threat.

Nowadays, thanks to technology, they exist different possibilities to activate the a "surveillance mode" of the user. Avoiding distractions could became harder depending on the context where the user is found and became even harder when pickpockets use the "collision" approach (Chapter 1.3) in these cases it is important to activate the Exogenous attention, being the attention that respond to a certain stimulus "we hear a noise and look at the place where it comes from automatically" (CPP S.A.U., 2013) Exogenous attention improves detection of, and facilitates responses to, salient sudden onset stimuli (McNeal, 2015).

They may exist different ways to Re-direct the exogenous attention, on the other hand, possibilities may decrease when this kind of features are applying to a product. Alarms, visual alerts, actuators, every action that redirect user's attention will be classified under the Surveillance insight.

3.1.2 ACCESS

The user determinate who may be able to be in contact with their personal goods through an effective closing mechanism.

Keeping personal property out of criminal range is a concern that all the victims have. The most common knowledge solutions for many users is a lock that forbid any unexpected guest to reach for the personal property. "A lock is generally meant to control physical access between two areas, either keeping someone or something out, or in, unless authorized to traverse that boundary. Access control is the primary security objective." (TED, 2013) Analyzing the victims' experiences and how do they react, closing systems became crucial to elaborate an

anti-pickpocket product. Surveillance may be the preventive way, but Access will become the bodyguard of the situation. "Locks are one component of physical access control mechanism meant to prevent physical and emotional harm, including but not limited to assault or harassment." When the users are not able to protect their property, nowadays, thanks to technology development, they can easily rely in other solutions.

Another point of consideration will be, which kind of lock should be most effective. Nowadays it exists many different lock models, either they are mechanical, hybrid or electronic but, Which typology should be the most effective? The report elaborated by the Independent Security Evaluators (ISE) points that the best lock solution should be a Hybrid lock, with both electronic, due their sophisticated and key-less functions, and mechanical, to have a second option in case of a system failure. This speech addresses another element to take in consideration, the Key.

"Perhaps the most recognizable distinction between mechanical and electronic systems is the key itself" (ISE - Independent Security Evaluators, 2014) The key is the element that provides the subject have access to the elements protected by the lock. Every lock typology have their specific key model, either forged or electronics. The perks of electronic keys, such as passwords and patters, are that the user do not have the need to carry around with an external element such as a forged key (ISE - Independent Security Evaluators, 2014).

An effective electronic lock system can offer an effective protection rather than a physical key. "Mechanical locks fall short compared to electronic locks in the three primary attack surfaces that the two types of share: The lock, the key, and key storage. In each of these areas, electronic locks offer opportunities for improved and additional security features that mechanical locks inherently cannot provide." (ISE - Independent Security Evaluators, 2014).

Currently exist a wide variety of electronic and digital keys, such as RFID, passwords

Access	Problem Insights	Problem Shifting
The user will determinate who could be able to be in contact with their personal goods trough an effective closing mechanism.	Pickpockets can open de bags o put their hand inside the user pockets, even if the bags are hidden. Users are worried that no one could open their bags in case of emergency. Sometimes users give access to people they trust.	4 Create a way that makes the owner be the only who decides the access to the personal goods.
	The bag can be easily open when the owner is not closeby. The pickpocket may have the time to open the lock.	5 Create an effective closure system. Surveillance Consideration
	Sometimes pickpockets steal the whole bag or accesory, take what it is inside and then disposal the bag.	5 Create an effective closure system.
		Tracking Consideration
	Users forget to close their bags and pockets.	5 Create an effective closure system.
		Surveillance Consideration
		Tracking Consideration
	Some users cannot close easily their bags due a disease (Ex.: Arthritis)	5 Create an effective closure system.
	People tend to lost keys and forget passwords.	
	Users wish to have a secret compartment inside the bag to hide more valuable articles.	Wearability consideration.
	Users have the need to wear their belongins or carrying accesories hidden so pickpocpocket cannot open them.	4 Create a way that makes the owner be the only who decides the access to the personal goods.
		5 Create an effective closure system.
	Some Electronic locks have malfunctions	5 Create an effective closure system.

 Table 9: Access Insight compared to possible scenario variables.

and patterns, but one of the most popular measurements applied by different companies nowadays is the Biometric Authentication. Keys can get lost, and passwords may be forgotten, but a biometric feature is going to be always part of to the user (ISE - Independent Security Evaluators, 2014). With Biometric Authentication users have a measured access control where the key are themselves. Even

though it also has it flaws and data-based scans may be hacked, the probabilities of an access violation remain low due the need of a more sophisticated resources to carry on with this task. "Biometric systems will, undoubtedly, be used increasingly more in physical access control in the coming years. Especially as technology develops to mitigate some of the risks that remain." (Nedap N.V., 2021)

From a fashion perspective, the current market has shown that heavy closure embellishments, such a door locks and industrial fasteners, have been combined with the contemporary apparel such as the example of Off White, Balenciaga, among others.

"It's not decorative, it's about things efficient, very pure, sometimes a bit massive. So simple that it's really evident. Of course, it's about functionality but also about protection. We can imagine easily that in the future all the tech will be inside the garment. Just like it's starting today with Jacquard by Google. The common devices that we use now may end up being inside the garment or inside our mind to make it easier to manipulate and control."

— Cécile Poignant

3.1.3 WEARABILITY

On-User attachment trough straps, clothing embellishments and accessories.

The research has shown that every user has a specific way to carry around their personal objects either by comfort, aesthetic, or security purposes "I use my small casual bag, (Crossbody bag) Because it's light, the handle gets short and long, When I go to the super, I keep it as close to my body for fear that I will attack a pickpocket." (Annex1). How people transport their belongings may be an open door for pickpockets to attack. "We will search for opportunities to be unavailable to the global web and to other people. This will result in hidden pockets, oversized hoodies, and backpacks that integrate into garments." Expressed Cécile

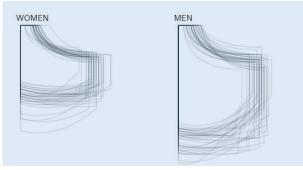


Figure 10: Average pocket size between women and men. (Diehm & Thomas, 2018)

Poignant

From a gender point of view women clothes are less functional regarding carrying accessories due the size or the absence of pockets "On average, the pockets in women's jeans are 48% shorter and 6.5% narrower than men's pockets" (Diehm & Thomas, 2018). The article also express that this matter is related more to a fashion business strategy "...we could all carry handbags, which is likely what the 8 billion dollar purse industry hopes we'll do, but not everyone wants to carry a bag. "The gap between women's and men's back pockets was less egregious. Women's pockets were still smaller, but not by much: women's skinny jean pockets were 0.3 inches (5%) shorter and 0.1 inches (2%) narrower, and women's straight jean pockets were 0.4 inches (7%) shorter and 0.1 inches (2%) narrower. Ultimately, men's back pockets were a bit deeper but just about the same width as women's." (Diehm & Thomas, 2018). User became neglected towards economic purposes of industries, Is important to consider that the wearable products shouldn't interfere with users routines ""A pack only provides optimal support when it's matched to your own specific needs. This also means that it doesn't restrict your freedom of movement" (Sport Dinaco, 2018).

3.1.4 PLACING

Users are not always in contact with their carrying accessories, is normal for any user to leave their backpack or their bag when they are in determinate places. Some scenarios forced the users to leave their personal belongings away from them. Some victims expressed that when they were in a public place having lunch, they got distracted for small instant and when they turn over their personal belongings were gone.

But how the product can offer a solution for this kind of situation. Taking as an example the Bicycles locks, a lock system that helps the user to fix their bike to another structure in order to avoid thefts to take it away from them.

Wearability	Problem Insights	Problem Shifting
	Some users do not like to wear bags or carrying accessories. They use the pockets of the garments.	
	The users use alternative trasnportation methods (bicycle, Scooter, Skateboard). Sometimes carrying accesories complicate the task.	2 Design an specific carrying article
	Some users leave their phones or electronics in the front pocket of the bags because is quicker to access when they are wearing it	comfortable for the user.
	For some users having their belongings in a bag or elsewhere rather than their pockets, turns out not to be practical.	
	User rather to keep their belongings as close as possible to their bodies trough straps, strings and accessories that can be cut	
	Pickpockets can Snatch the bag or the accessory from you. (bag snatching)	
	Users are concern that if the bag is snatched they maybe could get hurt.	
	Some users won't let go their belongings in a bag snatching situation	
	Users separate their valuable belongings between different bags and pockets. (Ex: ID different from the wallet)	2 Design an specific carrying article comfortable for the user.
	Users choose the carrying accessory based on the comfort of how to attached it to their body (Strings and straps)	comortable for the user.
	Some users believe that a string connected to the objects would help no to loose them.	
	Some users buy utility jackets or sportswear because they have more compartments	
	Things can easily fall down from the pockets.	2 Design an specific carrying article comfortable for the user.
	Users wear different clothing typology depending on the season.	comortable for the user.
	Some users leave their belongings unattended in recreational spaces because they are distracted or under the influence of substances.	
		Surveillance Consideration
	Users wish to have a secret compartment inside the back to hide more valuable articles.	2 Design an specific carrying article comfortable for the user.
		Access Consideration
	Smartphones, Keys and Wallet are the most common objetct carried by people and user commonly try to have quick access to them	9 Design an specific carrying article comfortable for the user.

 Table 10: Wearability Insight compared to possible scenario variables.

3.1.5 TRACKING

Remote monitoring. The possibility to trace items and accessories through a digitally connected circuit system. Comes after

surveillance when the user is non in direct contact with their personal belongings.

In worse case scenario that the user is facing a situation of pickpocketing, the items should be able to be tracked either with an external device or a digital app inside the smartphone. It has

	Problem Insights	Problem Shifting
Tracking	Users sometimes leave their belongingns alone thinking they are safe. (Workplace, schools, friend's house, car trunk).	
	Pickpockets can steal the bag, with all the personal goods inside, from the spot where it was placed	
	Phone tracking system could be turned off or the phone could be inside the stolen bag.	3 Keep the components connected in a surveillance-tracking system.
	Some Victims prefer to have just one bag because is easier to monitor.	3
	Some victims, once they realized they had been pickpocket, try to re-take the way or tracked they made before they lost their items.	
	Pickpockets can cut the pocket or bag to steal the belongings that are inside.	Surveillance Consideration
	Users may got distracted when they are carrying more than 2 bags.	3 Keep the components connected in a surveillance-tracking system.
		Surveillance Consideration
Someti acceso		3 Keep the components connected in a surveillance-tracking system.
	Users forget to close their bags and pockets.	Surveillance Consideration Access Consideration
	Sometimes pickpockets steal the whole bag or accesory, take what it is inside and then disposal the bag.	3 Keep the components connected in a surveillance-tracking system.
		Access Consideration
		3 Keep the components connected in a surveillance-tracking system.
	Users forget to close their bags and pockets.	Surveillance Consideration
		Access Consideration

 Table 11: Wearability Insight compared to possible scenario variables.

been several years since tracking technology were available for the mass market improving with the pass of time and offering different solutions for the users (Find my Phone, Find My device) Phones and computers are already equipped with high-tech sensors, but there are still a lot of user that does not know about their complete function (Annex 4).

But does is necessary for this scenario to apply a GPS antenna to track the personal belongings? If we consider that the Smartphones that are already on the possessions of the user had this system integrated and we are looking to protect this gadget, the product should stay all the time with the smartphone, it will only be a waste of space and battery energy. If we take the example of Tile, that impulse by Bluetooth it generates

a sound when the user is far from their articles or he los them.

3.1.6 PROBLEM ASSISTANCE

When the crime is carrying on, the user could be exposed to some risk other than just the personal objects theft. In this case user should have a back-up solution in case they are found in this situation. Taking as an example the case of Stay Safe wearable silent panic alarm (Safe Apps Ltd., 2021) that is a badge connected via mobile app to the smartphone. This seem to be a good solution in case of any further complication during the crime develop.

Another point to consider is that alarm can

	Problem Insights	Problem Shifting
Placing	Pickpockets can cut the strings and straps of the bag to stole it with the personal belongings inside. Pickpockets can cut the strings and straps of the bag to stole it with the personal belongings inside.	
	Users do not have where to placed their belongings during their routines (public transport users, alternative mobility users)	Design an specific carrying article comfortable for the user.
	Users sometimes secure the bag strings or strap on the floor or furniture, and sometimes pickpockets cut them to steal the bag.	
	Placement could be limited by measurements limitations (airlines conditions, locker size).	

 Table 12: Placing Insight compared to possible scenario variables.

discourage the felon to carry on a crime "Studies have been conducted on the effect of the presence of a home security system. The results are in: as much as 60% of burglars casing a potential target would indeed be deterred by an alarm system" ((SafeWise, 2021).

	Problem Insights	
AND COMPANIES WAS THE AND REAL PROPERTY.	A CONTRACTOR OF THE PARTY OF TH	
Problem Assistance	Users believe that an alarm or any other element could help to discourage the criminal.	
	People might got scared in case of a pickpocket or a non contact theft.	
	Some victims had to go to the embassy or call the airline in the middle of their vacations because they had been pickpocketed	
	Some tourist victims do not report to the authorities in order not to ruined their holidays.	
	Some victims do not report to the authorities because they believe they do not have enough evidence.	
	Users would like a function that can contact you with authorities or an emergency contact.	
	People do not report to the authorities, either because they do not realize they were stolen or because they dont trust them. Some people have lost more economic value after pickpocketing (use of the credit card, legal documents)	
	Pickpocketing is a non violent crime. The law has gaps that permit pickpockets to repeat their actions without a severe punishment.	
	Pickpocketing is classified depending on every country jurisdiction, so it becomes harder to register a more accurate number of cases.	
	User do not know the legislation towards this problem.	
	Pickpockets know the law and they commit the crime again. Some people have lost invaluable things (photos,	
	notes, videos).	

 Table 13: Problem Assistance Insight compared to possible scenario variables.

3.2 DESING BRIEF

The product should be always closed avoiding or reducing any kind of unauthorized access by the user. In case of attempting, the product should notice the user with: A loud sound, a physical vibration, a light or even a mobile notification could help the user to direct his attention back to their goods; If is possible, offer some sort of assistance if is necessary.

Is important to consider that in some scenarios loud and visible notifications are not suitable, therefor a physical notification should be proposed, like a vibration action.

If the lock opening becomes complicated it would only interfere with the user's routine. Access must be fast and simple a task that can be done by the user even without watching at the lock, just like a pocket.

The lock must be a hybrid lock; Electronic locks are very effective and this way the user avoids the need of a key. A biometric key could also help to avoid patterns and passwords. It has to be hybrid because in case of electronic

malfunction the user should have another way to open the product.

The product should have an external element other than the user's smartphones, to redirect the attention on their personal items when they users are not in direct contact with their phones. This element could tell the user when their items are being jeopardized so they could be prepared to take the most convenient action.

The product should be able to be customized by the user in order to adapt to their day-to-day routines, technological gadgets and aesthetical preferences.

It should be able to be worn in different ways o different parts of the body (back, hips, legs) depending on the user preferences.

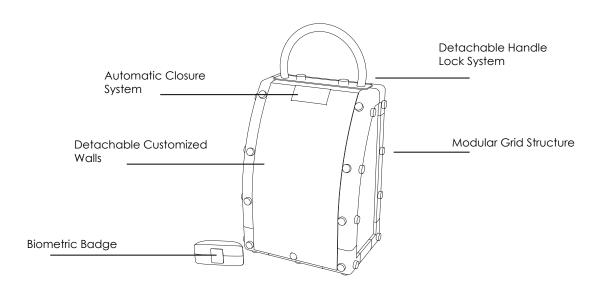
In case of pickpocket, the product should be provided with some sort of assistance, emergency contact call or authorities call.

CHAPTER 4: DESIGN PROCESS AND FINAL PROPOSAL DEFINITION STATE OF ART AND PRODUCT RESEARCH

4.1 FINAL DESIGN PROPOSAL

Based on the requirements exposed on the design brief and after a major proposal's exploration, it has defined that the more suitable product should be a modular bag with embedded technology and detachable components. In this chapter it will be shown the results obtained by the sketching and CAD modelling process exploration.

4.2.1 THE MODULAR MULTI-BAG.



Drawing 5: Modular Multi-bag illustration overview

- The Biometric Badge

One of the most important elements of the product will be the badge, that would oversee the actions and the communication between all the elements of the product and the user smartphone or smart gadgets. This element could help the user to monitoring their personal items even when they are not close to them.

It consists in rechargeable and portable device with to a fingerprint sensor and 2 push buttons that allow the user to control and modify the actions and settings of the product by biometric authentication. The badge will require:

- Fingerprint sensor: Biometric authentication
- Bluetooth Low Energy Microcontroller, for Input and Output transmission.
- Led light to communicate the actions, Ex: Red in case of problem, blue by settings, green etc.
- Vibrator motor to indicate specific outputs, such as unauthorized access.
- Push buttons to control the biometric badge settings.
- A small rechargeable Lithium Battery to feed all the electronic components integrated in the badge.



Drawing 6: The Biometric Badge; Top, Front, Lateral and Isometric View, CAD 3D and Technical illustration.

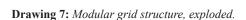
- The Modular Grid Structure

The structure is composed for a series of modular pieces that, ensembled together, will create the complete structure of the carrying accessory. These pieces allow the size of the product to adapt to the users' preferences. In this way the product typology may vary from a mini bag to a handbag or even a backpack. These features fit the needs of the user based on the customization user insight found during the research develop.

The structure will be joint by the user with special bolts and safety nuts from the inside of the product. This will give the more stability and will be necessary for holding the walls, the inside compartments, and the exchangeable faces of the product.

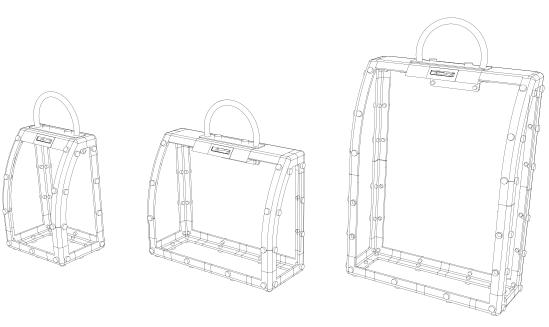
The structure is reinforced with a metal structure and conductive material that also works as a connection for the electronics embedded in upper piece.

For maintenance or repair or change of pieces the user could have the possibility to replace just the damaged piece.







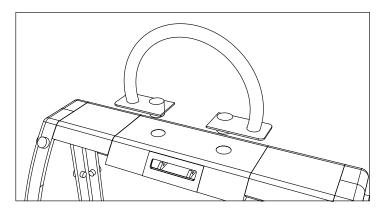


Drawing 8: Modular grid construction size and comparison illustration (From left to right Mini bag, handbag, Backpack)

-Handle: Placing lock system

Following the placing insight, when users are not near to their personal items, they would have the choice of fixing their modular accessories to an external resistant structure avoiding them to being stolen. The system behaves the same way as a bicycle lock but with a lighter material in

order not to be invasive for the user. The shapes and the material of the upper part of the handle could customized based on the aesthetical preferences of the user.

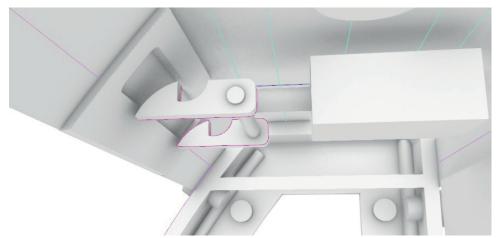


Drawing 9: Handle lock system illustration, opening demonstration.



- The Top Piece

The closure system is controlled by the biometric authentication sent by the biometric badge. The system consist in a electromagnetic push and pull solenoid actuator with a springs and hook that blocks the external piece of the frontal wall of the bag



Drawing 10: *Multi bag closure system, Internal view.*

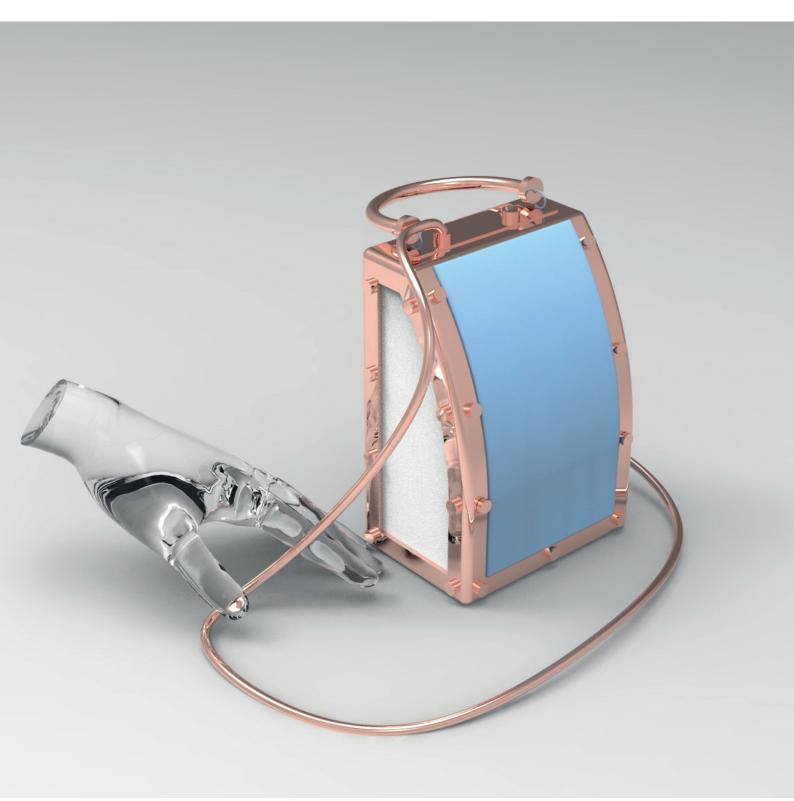
- Customized bag walls

The safety cover of the backpack will have detachable parts to offer the user wearability variables with the different typology modules integrated to the backpack (handbag, pouchy bag, mini bag, computer bag). Each wall would have a layer of Cut-Tex® PRO that is an ultra high performance cut resistant fabric, made from an innovative combination of ultra-high molecular weight polyethylene (UHMWPE). The user would have the opportunity of customized the covers of the multi bag in order to be adaptable to their aesthetical preferences.

Based on the customization insight the user should have the possibility to choose the way of wearing the product in order to be more comfortable and to adapt their routines, lifestyles and social context.



Drawing 11: Multi bag, Hand Bag construction, pink customized skins.



Drawing 12: Multi bag, Mini Bag construction, blue customized skins.







CONCLUSIONS

Conclusion 1: Technology for personal safety

Wearable technology has been developing rapidly during the last decades. We can find several gadgets directed to business, medical health, and wellness. On the other hand, there still are other opportunity areas to explore that, from my point of view, turn out to be extremely important. As Steve Mann mentioned, people a willing to invest more in protect their business and buildings than in themselves. People are exposed to a burglary the same way they are exposed to an armed robbery, nobody knows when is going to arrive and in the second one there are higher risk to take, such as the physical integrity. Therefore, should not we willing to protect themselves better? Personal Safety is a subject that should be taken under consideration deeply by business, creators, and product developers. There should be thousands of variables that could offer personal protection: Crime discouraging elements and self-defense actuators embedded inside the garments; Instant call connection with the authorities in case of emergency, like some health monitoring devices work. I am not expressing that counting steps and controlling your calories should stop, but maybe, as humanity, we can focus on more important subjects, even if they are not happening inside our social Bubble

Conclusion 2: Alternatives for Carrying accessories

Another point of consideration brought up by the research is that bags and accessories haven't been evolve enough during several decades, besides, the gender inequality is quite notorious when we are talking about pockets and carrying accessories. It seems that the fashion system should start considering that customer lifestyles and routines are constantly changing. Mobility has been evolving and people are becoming sort of nomads. Avoiding having a personal vehicle, they prefer to take alternative transportation solutions such as sharing and pooling, Therefore, it is crucial for the Fashion System to understand the needs of the future generation aiming to give a more suitable products for the nowadays lifestyles.

ANEXXES

Anex 1 - Pickpocket Victim 1 Interview

Ana Luisa Ortega Gender: Female

Age: 38

Ocupation: Business Woman

Q: Where do you live? Country & City.

A: México, State of Mexico.

Q: Do you use public transportation in your country? How often?

A:No, never.

Q: What items do you bring with yourself everyday? and What do you use to carry them? A: Wallet, with debit or credit card, drivers license, ID, some cash, medicine, smartphone, make up, lipstick, powder, eyeliner & perfume and a pen.

Q:What items do you bring with yourself to school or work? And, how do you carry them? A: Briefcase, If I'm at a company, nothing, I place all my items inside a briefcase so that thw only thing I manipulate is the briefcase.

Inside I place my laptop with it's charger, sometimes the ipad. Sometimes I only go for quick meetings and I oncly carry my tablet and personal bag, both of the chargers, ink pen and a little notebook for notes. Plus the items I mentioned first and a toothbrush in case I'm expected to be all day in the company.

When I bring my personal bag I try to use one that is more presentable for work scenarios, I have different models to mix and match accordingly.

Q: Have you ever had to go to a commitment directly after work without being able to go home first?

A:In the parking lot I informed everything that had happened. I always leave the house with all my belongings, I use a small briefcase. It doesn't happen often, one time I stayed in a hotel.

Q:What items do you bring with yourself in your free time and recreational time? (Restaurants, bars, discoteques, movies, fairs) and, which accesory do you use to carry your belongings and why?

A: I use my little crossed bag because it's lightweight, the handle can be shortenede and elongated, when I go to the supermarket I keep it as close to my body as possible for fear of it being robbed. The bag has a front zipper where I like to put my cell phone, it's practical to be able to take it out rapidly, and I can listen to it, I laso place my car keys there to be practical and have it all protected.

Q: Do you keep it closed all the time?

A: No beacause I forget to close it when I'm in a hurry, I can't keep it closed for safety reasons, and I realice it's open when my belongings start to fall on the ground. I also feel pressured by different situations like parking the car or having to pay for the parking, etc.

Q: What items do you bring with yourself when you travel? (Long trips, short trips, natrional or international) and how do you carry your belongings?

A: Short trip, handbag: If it's not a trip to the beach I only carry a handbag with the items mentioned on the first question; Small bag with hygene items, I have a special plastic bag to place my shampoo, mouthwash and body and face lotions (20cm x 15cm), make up, iPpad & chargers. Sometimes if I have to work I carry a briefcase with important documents.

Q: Why don't you carry the items on the handbag in the briefcase as you do for work? A:Because I carry the briefcase in case I need

anything for work, even if I probably won't use it I still carry it, what I'm definitely going to use is my habdbag which is why I carry both.

Q: Would you like the idea of carrying a modular bag that helps you with both your work and handbag items and you could carry them together or separately?

A:Yes.

Q:Have you been a victim of robbery or has someone taken your personal belongings out of your personal bag without noticing? Where? (Country, city, space within said city).

A:Yes.

- 1. Someone took my wallet out of my bag without me noticing while I was eating, it was a bag closed by a magnet, they opened it and I didn't feel it. I had my ID, driver's license. I lost them and got very angry. They also used my credit card for a 2000 pesos charge. I had another card for a department store and they charged it for 200 000 pesos. I didn't have any further problems, it appeared in my credit bureau but as a cancelled, I never knew what they got and I never looked into it, everything was done in 15 minutes. The bank reimbursed me directly.
- 2. Someone stole my briefcase in Starbucks I had my computer with it's charger, legal paperwork regarding the settlement of a company, 200 tickets for a play and bussiness cards.
- 3. I lost my cellphone, I thought I put it in my coat but it fell and I didn't notice.
- Q: Do you remember how it happened? What you were doing at the moment? What was stolen? How much do you think everything that was stolen was worth?

A: 15,000 just for the laptop, 300,000 pesos including the rest of the stuff.

Q: What do you think you needed to avoid this situation? (Actions, decissions, accesories, objects).

A:In the market, I learned to carry little money, not having every important document with me. Being cautious, not having with me things that I don't need.

Q: ¿Have you considered buying anti-stealing items? ¿Which ones?

A: Yes, a personal crossed bag to keep close to eh body that icluded different compartments to keep documents and money. A hide bag a teaser, pepper spray a whistle to use as an alarm.

Q: How would you like an accessory that only you could open? For example a little personal bag, backpack or even an external pocket that could only be accessed with a password o digital print without external locks or keys

A: Yes, but what would happen if I had an accident and all my personal credentials are inside.

Q:Would you be willing to pay an elevated price for said accessory?

A: Yes but I would pick a bag that I could wear daily and maybe a little evening bag, depending on the size, something customized that could adapt to each person's necessity.

Victim Suggestions:

It would be amazing if your accesory could have a secret compartment where you could place your important personal credentials. Voice command to activate a "Defense mode". An emergency number, emergency link to activate said "defense mode".

Anex 2 - Pickpocket Victim 2 Interview

Luis Marrufo Gender: Male Age: 30

Occupation: Web programmer

Q: Where do you live? Country and city.

A: Mexico City, Mexico.

Q: Do you usually use public transport in your city? How often?

A: I rarely use it, only when necessary.

Q:Which items do you carry with yoursel everyday? Which accessory do you wear to carry them and why? Do you keep it closed all the time?

A: Wallet(ID, Driver's license, debit card because my credit card is locked if used, cash), cell phone, keys. I use the pockets in my jacket. After someone took things from my bag without me noticing it I learned that I had to keep my pockets closed and keep my things well guarded.

Q: What items do you carry with yourself for work or school? What accesory do you use to carry them and why? Do you keep it closed all the time?

A: Laptop. mouse, USB, notebook, Laptop and cell phone chargers, jacket, toothbrush, work ID holder, pens, bottle opener and business cards. I use a Zelda crossbody bag. I used to put it in the trunk of the car to avoid people opening the car to steal it. And I do keep it closed all the time, I force myself to keep it closed and keepint it in plain sight to avoid misplacing it. When I left for lunch break I left it in my work cubicle but I tried to hide it, I mistrusted the cleaning personnel becasuse things got lost in the workplace.

Q: Did it ever happen that you got something stolen at the workplace?

A: One time they took a speaker and another time they took some checks. It was the cleaning personnel and my boss even brought a lying detector.

n my former job, we worked in a house where

there were cameras. We were working in broad daylight when a guy entered to steal things inside of the office and no one noticed. It seemed like he knew exactly where to go, he stole some checks and money.

Q: What articles do you bring on your off days and recreational time? (Restaurants, bars, discoteques, movies, fairs) and what accesory do you use to carry them and why? Do you keep it closed all the time?

A: Only the items mentioned previously, sometimes I'll carry the charger when I'm out of power and I'm going to a place I know is safe.

Q:What articles do you bring with yourself when you travel? (Long trips, short trips, national and international) and which accesory do you use to carry your things and why? Do you keep it closed all the time?

A: The articles mentioned in question 2; Trips: Hygene products, Mi computer, I almost always carry my computer in it's own bag, I don't use the Zelda one mentioned previously, itps a bagpack that's more comfortable to carry around and I can carry more stuff and also personal articles. For internatinal flights I carry my bagpack with my computer and handbag, and I can also carry other things such as chargers or the nintendo because I like to play, headphones and a book.

Q: Has it ever happened that you need to go to a second or third place from the first place you were at without being able to go to a house?(considering the house as the starting place)

A:One time I was leaving for the weekend adn I took the subway because I was getting picked up, I took my work bagpack and my suitcase. It was actually the time where they opened my bag without me noticing because I had too many things on with me, I had the wallet standing out, I was distracted. A guy bumped into me and two seconds later I realized I had been robbed and the guy got out immediatly after.

Have you ever been a victim of someone stealing your belongings without you noticing it? Where?(Country, city, space within the city). A: Mentioned above

Q: Do you remember how and what happened? What you were doing at the moment?

A: I was distracted by the things I was carrying, I was thinking about the trip, worried if I had everything with me. When I had to enter and re enter the subway ticker I left my wallet satnding out of the pocket.

Q:What was stolen? What do you think what was stolen was worth??

A: I had 700 pesos in cash, they stole my card but I cancelled it immediatly, they took my ID and driver's license, I had to cancel the debit cards and renew the license: You could say I lost a work day in the renewing and processes I had to go through.

Q: What do you think you needed to prevent the situation? (Actions, decisions, accesories, objects)

A: Owning something with zippers and being more careful (attention). I was very young, I was 21. I would've preferred not having to had been paying attention to my things, if I'd had the opportunity of storing the wallet.

Q: Have you considered buying anti-stealing or anti-robbery accesories? Which ones?

A: I have used a waist bag to keep my valuables, I donpt love them because they make you look like and old man, I don't love crossbody bags, I prefer backpacks. I had pepper spray but the dog ate it. I would like to buy a teaser, where I live there are suspicious looking people.

Q: What would you think about having an accesory only you were able to open? For example a bag, bagpack or even an external pocket that could only be accesed with a specific pattern, password or fingerprint, without any extrenal locks or keys?

A:Very cool.

Q: Would you be willing to pay an elevated price for this item?

A: Yeah, I would like it that it allowed you to enter more fingerprints of other trustworthy people, also to register different fingers. Something that avoids you being at risk of losing a finger like in sci fi movies where you

could lose an eye.

Suggestions from the victim:

A cell phone app, where you would have your fingerprint bank, safety issues.

Geolocalization, tracking your cell phone or back pack when you didn't have it with you. Inventory system.

Anex 3 - Pickpocket Victim 3 Interview

Gianluca Passero

Sex: Male Age: 26

Occupation: Student

 $Q\!:$ Where do you live? Country and City? .

A: Milan, Italy.

Q: Do you use the public transportation of your city? How Often?

A: Yes, everyday.

Q ¿Which personal goods do you take with yourself every day? Which accessories do you use to carry them around? Do you keep it locked all the time?

A: Telephone, obviously, wallet, (ID, credit cards, driving license, fiscal code, university card, atm card (public transportation), gym, supermarket and services, keys. I carry them inside my pockets, just the jeans pockets. I am worried to put them on my jacket pockets, because is easier to get stolen, if I have it in my jeans you can feel the pressure when is moving or when someone is reaching for them. If I have them inside my jacket pockets probably I wouldn't notice if someone is trying to take them out.

Q: ¿Which personal goods do you take with yourself to go to work or school? Which accessories do you use to carry them around? Do you keep it locked all the time?

A: My computer, not daily but must of them, when I have to study, (in Mexico I didn't take it because it was easier to get stolen), chargers sometimes, books and notebooks, pencils the cheap headphones, not valuable. Sometimes a drawstring bag, other times a backpack, and the third one the messenger bag.

Q: You make your bag typology decisions based on what?

A: If I have to carry on a few notebooks, pencils or chargers I will take the drawstring bag, if I have to take the computer with me, I prefer the backpack or the messenger bag, depending in which I found first, in order to protect my

computer from get damaged when I am in the subway.

When I am really full with things I will bring the messenger bag that is bigger.

Q: ¿Which personal goods do you take with yourself in your free time (restaurants, bars, nightclubs, cinema, fairs)? Which accessories do you use to carry them around? Do you keep it locked all the time?

A: If I have to go to the gym, towel, headphones, clothes, gloves, swimsuit, flip flops, water and the locker's lock, and the gym ID that is always in my wallet. And I take a big bag (The weekender).

Q:Do you leave your phone in your back pack? A: I don't, because I am still a little bit concern that someone could steal it from the locker. When I am doing the routine I have the towel, earphones, gloves, water, smartphone. I put it inside my pockets, and when I have to do my routine and my things follow from my pockets I put them aside. Sometimes I used the pants that has the zipper, I don't take it with me all the days. When I am going skateboarding, I take the skating gears, tools and the helmet inside the backpack.

Q: ¿Which personal goods do you take with yourself when you travel (weekend getaway, long trips, international flights)? Which accessories do you use to carry them around? Do you keep it locked all the time?

A: Weekend gateway: clothing, personal care, sunglasses, chargers, earphones, towel, razor. I bring a trolley and a backpack in case the trolley is full. The trolley is more spacious, but right now with Ryanair I just can bring my backpack. I had to borrow because I didn't have another one

Long trips: I put my laptop in the external part of the trolley, its easier to pass customer controlled inside the airport,

I always try to carry my laptop with me when im bringing it. And I take my backpack for the laptop.

Q: Have you ever had to go to a place B or even C, after being at place A without going back home first? Considering home as starting point.

A: After Im going skating I take my contact lenses, charger and toothbrush.

I check the size of the backpack that I have to use, I normally use the backpack.

Q: Have you ever been victim of a pickpocketed or have you ever got your personal goods stolen without you notice it? Where were you? (country, city, space in the city)

A: One was in the metro of México City. an the other in the skate park but I'm not sure if I got stolen or I just lost the item because I left my backpack open.

Q: Do you remember how was it? What you were doing in that moment?.

In México city, normally the metro is really really crowded, during the rush hours. When I was waiting for the train to come, I received a message from a friend, so stupidly I took out my phone to answer, We were planning where to meet. Once the train arrived people started to push, as they normally do, when the train is full, During this moment, I felt that something in y pocket was moving, and I realized that my phone was gone. The was a man that told me that there was a guy that ran away. I get down the metro and start running and yelling for help. I asked the police and they told me that it was pointless to look for a mobile phone.

Q: What was stolen from you? How much do you believe was the value of the stolen goods? A: My cellphone, it cost 200 euro.

Q: What do you think you would have needed to avoid it? (Actions, decisions, accessories, objects)

A: Don't use the metro when is really crowed, stay the whole trip with my hands in my pockets, of course is not possible because you need to use the hands not to fall.

Q: Have you considered buying anti-pickpocket or anti-theft accessories? Which ones?

A: Yes, A jacket with an inner pocket because would be more safe.

Q: Would you like to have an accessory that only you could open it? For example: a bag or backpack or even an external pocket that you could open with a pattern, a password or even your fingerprint, without the need for external padlocks or keys?

Depends on the cost.

Would you be willing to pay a high price for this item?

I don't think I could afford it right now. But in the near future it could be a great option to prevent bad consequences especially when traveling to countries without a proper safety. I am scared that the felon would get mad and make the things worse, I could be in danger.

Anex 4 - Pickpocket Victim 4Interview

Flavia Amato Sex: Female Age: 25

Ocupation: New Media Artist

Q: Where do you live? Country and City? .

A: Milan, Italy.

Q: Do you use the public transportation of your city? How Often?

A:Yes, every day.

Q:¿Which personal goods do you take with yourself every day? Which accessories do you use to carry them around? Do you keep it locked all the time?

A:Cellphone, keys, money. The wallet im not taking always with me, because is the first thing cirminals steal from you so I rather to just take the money; Tabaco. For the credentials I take the card itself if im not going to a special place and I take with me a jacket with pockets that could be comfortable for me to carry my stuff. I always prefer to use the clothes pockets.

I have it always have it closed, I never forgot. I forgot once to close it because I was distracted, I forgot to close because maybe I was talking on the phone or busy with my dog. Sometimes I realized after 5 mins. Or maybe even when I am back home, so ihave to control that everything is in my bag.

Q: ¿Which personal goods do you take with yourself to go to work or school? Which accessories do you use to carry them around? Do you keep it locked all the time?

A: Computer, nothebooks and pens, cables, mouse and chargers. electronics, sometimes food, personal care goods, sunglasses and glasses without case, watter bottle.

I bring a backpack to carry them, I rather to have a carrying accesorie that has a lot of compartments in order to be easy for my to move because I always carry around a lot of stuff and it becames difficult to track. Also is fixed to the back and its more comfortable to keep safe and to carry. And I always control that the backpack is closed and also I stop

people on the street that had their bags open to tell them to close it.

Q: ¿Which personal goods do you take with yourself in your free time (restaurants, bars, nightclubs, cinema, fairs)? Which accessories do you use to carry them around? Do you keep it locked all the time?

A: For a nightclub, I prefer not to bring a bag, to have everything under controlled inside my clothes pockets, if I have my stuff in the jacket, I always keep the jacket with me even if im not wearing them. I am limitated by the outfit, depending on the event or situation I decide to use a bag, but I always prefer to be comfortable so the less I can avoid use and extra accessory would be better. I don't like big pockets clothing for aesthetical reason, I don't like look big or full of stuff in my pockets. I like harness but again it has to be curated for the outfit.

Q: ¿Which personal goods do you take with yourself when you travel (weekend getaway, long trips, international flights)? Which accessories do you use to carry them around? Do you keep it locked all the time?

A: The products that I mentioned before, but if I have to work also my work tools. In this case.In the backpack I put the electronics, one clothing change, personal care objetcs. Because I lost my luggage and I'm scared to lose it again and be without clothes. For short trips sometimes the backpack because I take different transportation methods, motorbike, train, airplane.

I have a dog so things became more difficult, when I have a long trip, I bring a big trolley, the backpack with all the electronics, the dog, another bag because not everything feat, a little bag that goes inside the big bag in order to have easy access to the stuff that I put inside the little one: Food, and water normally and a crossbody bag where I put my accessories like phone and keys, (maingly in summer because I don't wear a jacket).

Q: Have you ever had to go to a place B or even C, after being at place A without going back home first? Considering home as starting point. A: I take my backpack together with my computer If I have an event after work. If I the event requires a second outfit in a little bag. If I have the opportunity I rather to place my back

in a safety place friends house, wardrobe, etc. otherwise I take all my stuff with me, even my laptop.

Q: Have you ever been victim of a pickpocket or have you ever got your personal goods stolen without you notice it? Where were you? (country, city, space in the city) Do you remember how was it? What you were doing in that moment? What was stolen from you? How much do you believe was the value of the stolen goods?

Yes, 3 times, 2 times i didn't realize and 1 was bag snatching: First In Madrid, metro station or so I believe. Getting out from the airport, I was buying the metro ticket, I distribute my money between my bags in order to prevent something to happened and remain without money. I use my ID card holder as a wallet to have everything controlled in a hidden pocket. I was with my ex, we have trolley one backpack. I have a handbag, a trolley and backpack. Inside the metro, being on anti-theft mood, I put my handbag between my boyfriend and I, but it wasn't enough. I realized until next day that I didn't have my wallet with me. We came back to the bar we were the night before to ask if they haven't seen anything and they told us no, I believed them. Actually I'm not quite sure where could it happened but I'm almost sure that it was inside the metro. That was the las time that I put my purse inside a bag without a zipper, it had only have a central button and it was really easy to put a hand inside from the sides. I had my personal documents inside, and I had problems to came back to Italy. I made the report at the embassy because I needed my ID to take the plane back home, the document were never founded back. Luckily I am always use to put my personal belongings trough different pockets in order not to remain without money in these cases, and after that day I never put my ID in the wallet. I just remember that I have to retake the same way I did one day before in other to try to find my wallet. I took 1/2 journey to try to find my things and report the event. I call the airline and the embassy just to know what I have to do to come back home. After that I let everything go because I didn't want to ruined my vacation for this reason.

The second time was Catania, I went to meet

one friend of mine who use to live in a insecure part of the city, it was in the middle of the day so I wasn't that worried, but around 3 or 4 in Sicily there is no one on the street. I was withy special jacket, after the madrid experience, and an empty bag because I was going to take back my computer. I heard a motorcycle cycle behind me (actually after this event I have always pay attention to the sound of a motorcycle) suddenly they grab the straps of my bag, even if it was empty. I'm a little bit stubborn so I didn't let go my bag and they drag me over for a little distance and I hurt one of my ribs but they couldn't take my bag away from me. My friend, as seeing that I wasn't arrived to him yet he called me for asking what happened. In the neighborhood everyone knows each other so they were asking me how do the thieves look like in order to help me find them but in the end they couldn't.

The third time was in Milan. I went out with a girl friend to a bar in Navigli. We went to the bathroom and after we keep drinking, I was a little bit drunk, but this time it felt different from the other night outs when I drink, i believe that that night someone put something inside my drink because I have a memory blackout, but the people around me told me that I looked quite normal. I had my phone inside my bag because I was a little bit drunk and I didn't have to many pockets because it was summer. It was a bag that didn't close very well but I put a jacket over it to cover to avoid someone could reach for my personal belongings. But, non being so conscious i couldn't realize who reach for my bag, unfortunately I don't remember what happened. I didn't report the case because I realized that never found the things, like happened in madrid, so I lost any hope to find it. On the other hand I realize that it was negligence of mine not to do it because, next day, it happened the same thing to my friend, she went to the same place and she also got her phone stolen, she did the report and the police found the guy who stole the phone. It was the same routine, we believes that in that bar they put something inside the drinks.

Q: Did you use some tracking app for finding the phones?

A: We didn't have it, in that time I thought that the app was only for the iPhone. Now I know that it exist but I forget to active them.

The last time we went to a nightclub. I'm a smoker and i had a tobacco holder with pockets to put my smoking paper, and some little accessories, and in that time the public transport card. In that time I didn't have my special jacket with a hidden pocket in the cuffs where, nowadays, I put my ATM card inside so I can put it in the metro access doors without taking out anything, so that's why I put it on my tobacco holder. The things inside I never really care, the thing that care the most was the tobacco holder. That night a drank a lot, in this case I don't blame anyone, I believe that maybe I let it fall. I realize after 10 min. I couldn't find it. In this case it was a theft, but I came back home without my belongings with me anyway. This is the reason why I always try to be comfortable of having clothing and accessories that I don't have to be carry on my hands all the time.

Q: Why you don't buy an accessory special for this kind of situation?

R: On winters I've always choose jackets that I like with pockets to put my items. For the summer i prefer a bag with a long strap so I can put it on crossed on my body to have more control around it, or a backpack. I don't like the fanny packs, but there are some nice one that with a different design capable to attached to the leg. When I find one that I like, in order to avoid backpack, handbag and even pockets, to have it attached to my body, I will buy one, Always depending on the outfit.

Q: What do you think you would have needed to avoid it? (Actions, decisions, accessories, objects)

R: For the bag snatching maybe a something that could helped me to release the bag in order not to fall when the motorcycle pulled me towards the floor. For the metro case, using the imagination i like the idea of a bear trap, that could trapped their hand before they reach for my belongings, also like this it will be notorious for everyone and the maybe will feel embarrassed about being caught, the goal would be to make obvious who is the thief; on the other hand could be dangerous, if the

pickpocket turn out to be a violent person he could hurt you.

Q: Other idea maybe something that let me know what is happening because in that time I was distracted.

Q: Have you considered buying anti-pickpocket or anti-theft accessories? Which ones?

R. Actually yes, I have always been a person who want to be comfortable and light. Normally when I looking for a jacket, I look for one that have a lot of pockets. The jackets that I told before where Ski jackets, they have the pockets in the cuffs to avoid your personal belongings getting wet from the snow. Thanks to this element, I considered that I could be useful for my cards (ATM).

Q: But what about bigger items like your phone? A: For my phone I put It in another pocket of the jacket. I choose that one (ski jacket) because it all kinds of pockets with the zipper, even in those were I put my hands inside while Im waking, so I put my phone and my hand inside, and over that pocket there is another one with also a zipper, so in this case no one can put their hand inside.

Would you like to have an accessory that only you could open it? For example: a bag or backpack or even an external pocket that you could open with a pattern, a password or even your fingerprint, without the need for external padlocks or keys?

R. If is something that I can use everyday and It makes me be comfortable I will buy it for sure. Of course everything depends on the outfit, for example, if I have to wear a skirt maybe with a kind of a fanny pack that can be attached to your leg with 2 closure system, one for the waist the other for the leg. In the case of the skirt I will have the possibility to attached by the waist. Same thing for a backpack, I have a big computer so is a must to have a big backpack, but from my perspective, I see people that uses the backpack like some sort of handbag, so maybe something adaptable would be good.

Q. Would you ever put your cellphone inside your backpack?

A: No, because I will never feel it over me so I believe it would be easier to take it out.

Q. If the backpack have an especial compartment that offer you to put the cellphone in an easy-access place for you would you take it?

A: Yes, because in this way I could be more focus on the things that my dog do rather than being concern about: "where do I put this?, where do I left that".

Q. Talking about night outs, Would you like to have an accessory suitable for your nightclub outfits and the needs you are looking for?

R. Yes, like I said before I would prefer a customized accessory, something universal or

Anex 5 - Pickpocket Victim 5 Interview

Ashley Dobrovic Sex: Female Age: 31

Ocupation: Housewife

Q: Where do you live? Country and City? . A: México City, México

Q: Do you use the public transportation of your city?

A: Yes, I do. Like three to 4 times a week, to get somewhere faster, normally I walk. If is the only way. Otherwise My husband Will take or i got and uber, but I rather take public transport.

Q: What items do you bring with yourself everyday?

A: My phone, obviously, my house keys, my purse, my wallet, when Im going to the or to the nursery I don't have to take my wallet, ID, credit cards, driver license, and money. American express, the gym card is in my gym bag, sometimes also my earphones. A little cross-body bag, two zippers simple and comfortable, I have it since im 15

Q:What items do you bring with yourself to school or work? And, how do you carry them? A: Cigarretes, wallet or purse, bottle of water,

cosmetic, powder and a brush, chapstick, hand cream, charger. A handbag, if I don't need that much space or a totebag, if im taking lunch and I need more space, also if I bringing a jersey. Modern backpack, is cool and I can keep my stuff with me, Is really irritating to go tto the wardrobe everytime. I take my tote bag, and I take my little cross-body bag in order to be always close to my belongins like phone and cirgarretes.

Gym: Tote bag, adidas, Gloves, earphones, a minipurse with my gym card, another chapstick, personal care articles, the bag is always ready. A towel and a bottle of water.

Q:Where do you put your cellphone?

R:In my pockets otherwise a little fanny spack to put my stuff, that is also inside my tote-bag.

Daycare: I have his little backpack. When I take my son to the park I bring diaper bag, I put my wallet and chapstick inside. Then I'll take my little crossbody bag. I take the ipad for my son

Q: ¿Which items do you take with you on a trip? A: For me: Skin care, toiletries, make up, pijamas, 1 or 2 change of sport clothing, clothes or dress. Carry-on briefcase and would be for and max, he is still little so I have enough space in my bag., and my little crossbody bag.

Airplane trip:

I will take an specific bag for my son, carry onbag. I also bring my carry-on, I use a totebag because I will need to carry my documents, water, snacks, and the ipad for maxi to watch it on the plane.

Long Trip: For me: A big Suitcase and also for my son. I also take my tote, and also a backpack, I have to bring the things for my son toys, snacks, diapers.

In my tote I have the ipad, my phone, water, charger.

Q: Have you ever been victim of a pickpocketed or have you ever got your personal goods stolen without you notice it? Where were you? (country, city, space in the city)

A: Yes, México City, My dad, in Barcelona. On vacation and in Rome, Italy.

Q: Do you remember how was it? What you

were doing in that moment? What was stolen from you?

On my way back from gym, I was wearing a hoddie with zipper, the pocket of my hoddie was open and the phone was there. A guy came very close took my phone and then take off the bus.

In The underground, he had his wallet in his jeans pocket, the metro was pull they push against him take the wallet off and run. My husband have a backpack with the money inside.

Q: How much do you believe was the value of the stolen goods?

A: My cellphone, 3000 pesos.1500 euros inside the pocket, he lost the bank cards and he had to call to cancel.

Q: What do you think you would have needed to avoid it? (Actions, decisions, accessories, objects)

A: Pockets with zips, I also lear about from that, Being more alert.

Q: Have you considered buying anti-pickpocA: ket or anti-theft accessories? Which ones? No never.

Would you like to have an accessory that only you could open it? For example: a bag or backpack or even an external pocket that you could open with a pattern, a password or even your fingerprint, without the need for external padlocks or keys?

I like that, with and inventory of finger print and tittle compartmens, for cigarrees, your keys, cards and coins, wallet-purse. If I could charge my phone. A website to create your personal bags. Sometimes, ilike the perfect size, and evertying is right for me, but I don't like, the material. Because a matter of aesthethics or style.