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Factors influencing the choice of technique to launder funds: The APPT framework

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ABSTRACT

This paper proposes a new framework to provide insights into the techniques launderers adopt to clean illicit funds, drawing on existing literature and theories including rational choice, public value, structural coupling, and stakeholder. The proposed APPT framework is named after four factors that explain the choice of techniques: the **A**ctors involved, **P**redicate crime, the **P**urpose of laundering, and **T**echnological innovations. While the current literature on money laundering primarily directs attention toward aspects such as regulatory frameworks, the stages of money laundering, and ways of detecting it, there is a lack of understanding about the reasons underlying a launderer's choice of techniques. This paper endeavors to reduce this gap in the literature and contribute to understanding the motivation of money launderers for the benefit of investigations. The framework offers new insights for the money laundering literature and has implications for neophytes, practitioners, and institutions teaching financial crime.

1. Background

By its nature, money laundering is carried out illegally, outside of the normal range or accessibility of economic or financial statistics. Since the underlying activities (predicate crimes and acts of money laundering) are hidden within a web of processes, it is challenging to ascertain how and where it is happening. However, similar to other aspects of underground economic activity, rough estimates have been put forward to give some sense of the scale of the problem. For one, the International Monetary Fund estimated the level of money laundering to be between two percent and five percent of the world's gross domestic product (2023). Money laundering is undeniably a threat to global security; along with its predicate crimes, it has corrosive effects on communities, democratic institutions, and economic power on a global scale. Laundered funds may be used to finance other crimes (Rusanov and Pudovochkin, 2018). Overall, money laundering results in economic distortions, the erosion of financial sectors, reduced government revenues, and other adverse socioeconomic effects (Barone and Schneider, 2018; Degryse et al., 2019; Tiwari et al., 2023; Walker and Unger, 2009; Bhattacharjee, 2020).

According to the United Nations (UN) 2000 Convention (UNODC, 2004), money laundering is the process of converting or transferring an illicit asset to conceal that illegal source or aid the criminal involved in committing the crime. It typically occurs after other illicit activities such as drug trafficking, robberies, smuggling, tax evasion, terrorism, bootlegging, art theft, vehicle theft, and fraud (Mitchell et al., 1998a, 1998b). Efforts are made to disguise the nature and origin of illicit income and to integrate it into the financial system without drawing attention from tax authorities and law enforcement (Compin, 2008). Money laundering has often been considered a varied and flexible process (Bichler et al., 2017a), which demonstrates the importance of practitioners such as investigators and forensic accountants in uncovering money laundering.

Tiwari et al. (2020) reviewed the money laundering literature and categorized it into six themes: anti-money laundering frameworks, economic effects, key actors involved, the magnitude of the problem, new opportunities, and the detection of money laundering. Among various aspects related to money laundering, the techniques employed to launder funds have also been discussed in the literature (Unger and Hertog, 2012). Various techniques are used to launder money, but new techniques or a combination of them may be used depending on changes in circumstances. These commonly identified techniques include the electronic transfer of funds, correspondent banking, structuring, casinos, real estate, prepaid cards, online banking, shell

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companies, and trusts. The complexity may vary depending on the situation, with new techniques being created in response to technological changes and government regulations (Gilmour, 2016a).

As techniques, technology, and regulations evolve, there has been a call to revisit existing – and widely accepted – money laundering frameworks to assess their veracity (Cassella, 2018; Gilmour, 2023; Levi and Soudijn, 2020). For instance, the relevance of the traditional three-stage placement, layering, and integration model has been questioned considering the evolving global financial crime landscape (Cassella, 2018). Cassella concluded that a more flexible and dynamic model of money laundering is needed for contemporary times. Similarly, Gilmour critiques the model, finding that legal and practical challenges are associated with it given the changing nature of financial crime (Gilmour, 2023). He recommends a holistic, risk-based approach to anti-money laundering instead of a compliance-based approach. However, there is no existing framework in the literature to determine what technique(s) a launderer may use to launder illicitly generated funds. A holistic framework that helps determine the technique(s) adopted by a launderer may help in combating money laundering by generating an appropriate response by regulators, investigators, and indeed, researchers.

This paper begins by explaining the method employed to develop a new framework to understand money launderers' choice of techniques. It then explores previous studies into money laundering, elucidating the theoretical and empirical work done in this space. Within the exploration, the factors influencing the choice of techniques adopted to launder funds are examined by exploring insights provided by researchers and practitioners. These insights are synthesized to identify the factors influencing the choice of laundering techniques. Following this, a rationale for a new framework is provided. The new APPT framework is then presented, and real cases are used to demonstrate its applicability before concluding.

2. Approach to the new APPT framework

This paper employs secondary data to highlight the gaps in the current literature on understanding money launderers' choice of techniques. Money laundering literature can generally be divided into two primary approaches: economic and legal (Levi and Soudijn, 2020). Consequently, a scoping review methodology is used to synthesize empirical work on money laundering in both economic and legal realms. The objective of such a search is not to provide an extensive review of works in the domain of money laundering but to highlight the lack of work on combating money laundering typologies.

First, four electronic databases were incorporated within the search strategy: ProQuest, ScienceDirect, Web of Science, and Google Scholar. They were searched for papers that contained the keywords "fraud" AND "money laundering" in the title, abstract or keywords. Additional articles were obtained by investigating cited references and conducting Google Scholar searches. After an initial review of these papers, additional searches were conducted using keywords in those articles. The additional search keywords were "fraud triangle", "fraud diamond", "fraud theory", "money laundering typologies", and "money laundering method" as documented in Table 1.

Table 1 lists the database search strings that formed the basis of this review. The review of relevant studies, including Rusanov and Pudovochkin (2018), Dellaportas (2013), Dorminey et al. (2012), Gilmour (2016b), Huber (2017), Murray (2016), Ozili (2020), Ramamoorti (2008), Rocha-Salazar et al. (2021), Soudijn (2019), and Wolfe and Hermanson (2004), formed the basis for identifying a range of interrelated factors influencing the choice of technique adopted to launder funds.

Among various aspects related to money laundering, the techniques to launder funds are evident in the literature (Compin, 2008; AUSTRAC, 2016; Badawi and Jourdan, 2020; Benson, 2016; Bjerregaard and Kirchmaier, 2019; Buchanan, 2004; Compin, 2018; Samantha Maitland Irwin et al., 2012a). Commonly identified techniques include the electronic transfer of funds, correspondent banking, structuring, casinos, real estate, prepaid cards, online banking, shell companies, and trusts. New techniques can be created in response to technological changes and government regulations. However, no attempt is made in the literature to explain a launderer's choice of techniques from the long list available. Keeping this objective in mind, a thematic review of the existing literature on financial crime and other related areas is conducted and synthesized to identify elements. The identified elements, through analysis and synthesis of findings in the literature on financial crime and associated domains (Rusanov and Pudovochkin, 2018; Barone and Schneider, 2018; Wolfe and Hermanson, 2004; Ainsworth, 2013), are grouped into factors that could explain the money laundering technique(s) adopted.

The next section provides a brief overview of research on interrelated factors that form the basis of the proposed framework. Following this, the need for a new framework and its subsequent development are discussed.

3. Factors influencing the choice of money laundering techniques

Gilmour (2016a) uses rational choice theory to suggest that money laundering is a risk-diversification process involving rational decisions by launderers based on personal preferences and situational circumstances. In contrast to other crimes decisions taken by criminals, which may be irrational (Clarke and Webb, 1999), when considering money laundering, the choices are often understood to be made via a rational assessment of several direct and indirect factors. Consistent with the views of Clarke (1983), a launderer will assess these factors to reduce risk and maximize rewards. The authors acknowledge competing ideas, such as that of Kruisbergen et al. (2016), who argued that proximity, as opposed to profit maximization, was a key driver for the investment of illicit funds. However, the economic approach of rationalization helps to bring about an understanding of the offending activity itself, which the APPT framework attempts to bolster. That is, the current rational choice perspective does not shed light on the launderer's choice of technique. Consequently, it would be valuable to have a framework for money laundering that incorporates the interaction between critical factors to explain the choice of techniques adopted to launder funds. This aligns with the views of Cornish and Clarke (1987) and Marteache et al (2015), who state that the characteristics of offenses provide a basis for selecting alternative courses of action and this eventually influences an offender's choice. The result will be an improved understanding that may aid in the detection, and subsequent deterrence, of money laundering schemes.

This paper synthesizes key literature to develop a range of interrelated factors and proposes the APPT framework. The development is consistent with the views of Huber (2017), who stressed the need to consider n-dimensions of financial crime to be accounted for in a framework attempting to explain, prevent, predict, detect, and prosecute financial crimes. Huber's proposition emerged from his critique of the enduring fraud triangle, where he found that fraud theory too often focused on personal characteristics and traits and neglected broader systemic factors that help to explain fraud. Adopting his approach of looking beyond individual characteristics and using the studies of Ainsworth (2013), McCarthy et al. (2015), and Wolfe and Hermanson (2004), we explain the role of actors in influencing the choice of money laundering technique(s) in a broader context. Similarly, Samantha Maitland Irwin et al. (2012a), Bajada (2017), and Rusanov and Pudovochkin (2018) find predicate crime to be critical in influencing the money laundering process. The works of Hobbs et al. (2005), Compin (2008), Krieger and Meierrieks (2011), and Vittori (2011) are used to highlight the purpose of laundering influencing the choice of money laundering technique(s). Furthermore, this paper moves to draw from the works of Richet (2013) and Barone and Schneider (2018) to highlight the role of technological innovation in the adoption of money

Table 1
Search Log with Keywords.

Database	Search string	Access date	Results
Google Scholar	"fraud" AND "money laundering"	06–02–21	62,600
Web of Science	"fraud" AND "money laundering"	07–02–21	264
ProQuest	"fraud" AND "money laundering"	07–02–21	6480
ScienceDirect	"fraud" AND "money laundering"	09–02–21	1469
Google Scholar	"fraud triangle" AND "money laundering"	20–02–21	1300
Web of Science	"fraud triangle" AND "money laundering"	20–02–21	5
ProQuest	"fraud triangle" AND "money laundering"	20–02–21	118
ScienceDirect	"fraud triangle" AND "money laundering"	21–02–21	14
Google Scholar	"fraud diamond" AND "money laundering"	27–02–21	444
Web of Science	"fraud diamond" AND "money laundering"	27–02–21	3
ProQuest	"fraud diamond" AND "money laundering"	13–03–21	113
ScienceDirect	"fraud diamond" AND "money laundering"	14–03–21	4
Google Scholar	"fraud theory" AND "money laundering"	18–03–21	401
Web of Science	"fraud theory" AND "money laundering"	21–03–21	24
ProQuest	"fraud theory" AND "money laundering"	21–03–21	123
ScienceDirect	"fraud theory" AND "money laundering"	21–03–21	3
Google Scholar	"fraud" AND "money laundering method"	07–04–21	148
Web of Science	"fraud" AND "money laundering method"	07–04–21	60
ProQuest	"fraud" AND "money laundering method"	09–04–21	47
ScienceDirect	"fraud" AND "money laundering method"	09–04–21	7
Google Scholar	"fraud theory" AND "money laundering typologies"	09–04–21	0
Web of Science	"fraud theory" AND "money laundering typologies"	09–04–21	2
ProQuest	"fraud theory" AND "money laundering typologies"	09–04–21	1
ScienceDirect	"fraud theory" AND "money laundering typologies"	09–04–21	0

Table 2
Factors influencing the choice of money laundering techniques.

Influencing Factor	Sub-factor
Actors Involved	Criminal: Actor responsible for a predicate crime, that is, self-launderer Non-criminal: Professionals, financial institutions, or other organizations not a direct party to the predicate crime, such as money exchangers, underground banking and social network actors, including hawala exchangers, black-market currency exchangers, and virtual currency exchanges
Predicate Crime	The amount involved in the crime The nature of the crime, which may be quasi-legal or violent in nature The location of the crime
Purpose of laundering	Facilitate integration into the economy Finance further crimes
Technological Innovations	Technologically intensive Less dependent on technology

laundering technique(s). Additionally, the paper also uses concepts of public value, structural coupling, stakeholder theory, and cost-benefit analysis to explain the interrelation between the identified factors. The influencing factors are summarized in Table 2 following a thorough exploration of these factors.

The nature, location, and the amount of money involved from predicate crime, the purpose for laundering, and the kind of technology required/available influence the choice between criminal and non-criminal actors to launder funds (the criminal launderer is the one who commits the predicate crime and is laundering; the non-criminal launderer is someone unrelated to the predicate crime). Similarly, the ultimate motive for laundering funds, that is, integrating the funds into the economy or financing further crimes, influences the desire to maintain anonymity. The motive, in turn, plays a crucial role in deciding the actors involved and the use of technology, as maintaining anonymity at times may be the least of concerns. The same holds regarding making use of the available technology. An explanation and justification of each factor follow. The factors are then summarized in Table 2.

3.1. Actors Involved

The act of laundering funds may or may not be undertaken by the actor responsible for the predicate crime. The knowledge and skills of the actors play a critical role in determining their participation in illicit schemes (Wolfe and Hermanson, 2004). At times, sophisticated techniques to launder funds may not be required because of the evident link between the proceeds and crime; in such cases, criminal actors may launder funds by themselves. For instance, for laundering drug proceeds, as reported by Van Duyne (2003), Reuter and Truman (2004), and Malm and Bichler (2013), criminals laundered funds themselves using simple mechanisms. However, Soudijn (2012) found non-criminal actors to be an essential part of criminal networks in laundering funds, mostly when money laundering is part of the criminal activity of such networks and it requires sophistication (Rusanov and Pudovochkin, 2018).

The competence of actors is critical in determining the techniques adopted in laundering funds (McCarthy et al., 2015). For instance, the use of virtual currencies for this depends on whether the actor has received the specialized training required (Dostov and Shust, 2014). The actors capable of laundering funds have a well-connected network of experts to undertake the illicit act with knowledge about jurisdictions that respond slowly to compliance requests, a suitable combination of incriminated and legitimate assets, and awareness of bank compliance standards (Teichmann, 2020). As a result, the knowledge and expertise of both criminal and non-criminal actors in handling proceeds of crime are critical in determining the techniques adopted to launder funds.

Among non-criminal actors, facilitators or launderers operate in the informal sector (Levi and Reuter, 2006). This includes money exchangers, underground bankers, and people using social networks to

transfer cash, physically or through personal bank accounts. Several other factors must be considered to explain their motivation to participate in laundering funds; these include occupational roles, individual characteristics, and the organizational and social climate (Benson, 2016; Ainsworth, 2013; Albrecht et al., 1984; Andon et al., 2018; Broidy, 2001; Fritsche, 2005; Knust and Stewart, 2002; Kranacher et al., 2011; Kumar et al., 2018; Langton and Piquero, 2007; Murphy and Free, 2016; Paternoster and Mazerolle, 1994; Sykes and Matza, 1957). However, understanding the motivation behind their participation is outside the scope of this current work.

3.2. Predicate crime

An illicit activity that precedes money laundering is termed a predicate crime. It is the underlying criminal activity that generates proceeds in need of laundering. What constitutes a predicate crime varies between jurisdictions (Walters et al., 2012). Samantha Maitland Irwin et al. (2012a) found that certain predicate crime offenders preferred specific techniques to launder funds. As per Bajada (2017) and Rusanov and Pudovochkin (2018), the predicate crime is a critical factor in determining the process of money laundering.

The nature, amount of money generated, and location of the predicate crime influence the complexity of the techniques adopted to launder the ill-gotten gains. It is often stated that the more socially dangerous the predicate crime is, the more socially dangerous and complicated the efforts to hide the proceeds. Predicate crimes such as corruption need complicated laundering mechanisms, more so than crimes related to property and drug trafficking due to the often-complex political associations. Furthermore, higher proceeds of crime result in more complicated techniques adopted to launder funds (Rusanov and Pudovochkin, 2018). The same was highlighted by Bell (2002), who states that the complexity of money laundering depends on factors such as the volume of money and the type of predicate crime committed.

The location of predicate crime and its regulations are critical in influencing the complexity of techniques adopted to launder funds. For instance, in a location where the interpretation of law requires the predicate offense as an essential requirement to prove criminality, techniques to break those links between the crime and proceeds would be adopted (Murray, 2016). Similarly, the attractiveness of the actual location of the predicate crime would influence the laundering mechanism (Unger et al., 2006). That is, the regulatory and legal landscape can play a role in which mechanism is chosen. In the Cayman Islands, for instance, secrecy laws and weak regulation may drive launderers toward using shell companies. In Australia, weak regulations and enforcement capabilities across the designated non-financial businesses and professions – such as real estate and accountancies – may render them more likely to be mechanisms for launderers.

3.3. Purpose of laundering

Importantly, the predicate crime factor links to the purpose of laundering; while the two may not be able to be looked at in isolation in practice, the separation in theory helps to both break down and develop the model at hand. In essence, there has been research on what the predicate crime means for the wider problem of money laundering (Levi and Soudijn, 2020). For example, in cases related to drug trafficking, the primary concern involves the transfer of cash. However, challenges arise regarding variations in how the generated illicit funds are invested (Simonova, 2011).

To illustrate, Rusanov and Pudovochkin (2018) observed that giving dirty money a legitimate appearance may not be the only objective of money laundering. They stated that funds obtained from a criminal act are laundered, whereas, in other instances, laundered funds may be used to finance other crimes. Consequently, when considering the possible choice of the techniques to launder funds, the purpose must be considered. Research has suggested that the motive influences the degree of sophistication adopted in laundering (Compin, 2008). For instance, Compin (2008), Krieger and Meierrieks (2011), and Vittori (2011) have documented the differences between money laundering and terrorism financing based on sources of funds, the direction of financial flows, financial sophistication, and psychological profile. In line with the views mentioned above, Samantha Maitland Irwin et al (2012a). found that money launderers and terrorist financiers adopt different laundering techniques.

Such a distinction stems from the difference in the complexity adopted to launder funds depending upon the ultimate purpose. Money laundering is oriented to legitimization (Koh, 2006), leading to the use of complex techniques. Money launderers, to maintain anonymity, complement their actual business activities with fictitious transactions or an appropriate complex mechanism (Teichmann, 2020). On the other hand, terrorism financing is distribution-oriented, resulting in simple methods adopted to move funds. As Hobbs et al. (2005) point out, offenders operate where the benefits outweigh the risk involved; however, such an analysis may not be involved in the case of terrorism.

Finally, in money laundering, the source of funds is illegal, whereas in terrorism financing, funds may be from a legal source. In terrorism financing, the anonymity of the source is not the primary concern, but the focus is on hiding the destination of funds. Terrorism financing does not involve the complexity associated with money laundering (Bantekas, 2003) because of the difficulty of proving criminality for funds intended to be used for terrorist purposes as the proceeds of that criminal intent (Kersten, 2002). The purpose for which funds are laundered influences the need or desire to maintain anonymity. Additionally, the purpose of laundering is influenced by the ideology of actors, a factor considered necessary by Kranacher et al. (2011) in understanding the motivation behind committing an illicit act.

3.4. Technological innovations

Richet (2013) observed that traditional laundering techniques have evolved pursuant to the advances made in the online arena. The changes in technology have made it easier to commit cybercrime (a form of predicate crime) and launder funds (Speer, 2000; Sood et al., 2013; Bichler et al., 2017b; Kamps and Kleinberg, 2018). The increasing ease may be attributed to the extensive use of online platforms, which aid in overcoming the constraints of a social network, such as geographical or social barriers. It facilitates collaboration with perpetrators across the globe and thereby increases the opportunity to commit illicit acts (Leukfeldt, 2014). Barone and Schneider (2018) view cyber laundering and money laundering accomplished using automatic electronic devices as a growing threat.

The more recent innovations in techniques to launder funds include Bitcoin (and other cryptocurrencies), online gaming (usually for small amounts), encryption software, and secured browser technology such as The Onion Router (TOR), among others (Soudijn, 2019). They have increased the difficulties associated with detecting money laundering by adding more clandestine variables because of the increased association with technology (Gilmour, 2016b; Soudijn and Been, 2020). The largely unregulated transactions and exchanges on Distributed Ledger Technologies have been viewed as a threat to society through their use for money laundering, terrorist financing, and tax evasion (Scholl and Bolívar, 2019).

Numerous examples of technological advances are associated with committing predicate crimes, such as fraud and laundering funds (Dostov and Shust, 2014; Dalins et al., 2018; Tiwari et al., 2019). Smarter regulation could be aided by establishing a link between stakeholders (users of the technology) and the value generated from a technological innovation by drawing from the principles of public value and stakeholder theory, similar to cost-benefit analysis (Scholl and Bolívar, 2019; Bannister and Connolly, 2014; Rose et al., 2018; Scholl, 2001, 2004; Twizeyimana and Andersson, 2019). Until this happens, technological advances will likely increase the opportunities to commit financial crimes and to launder funds.

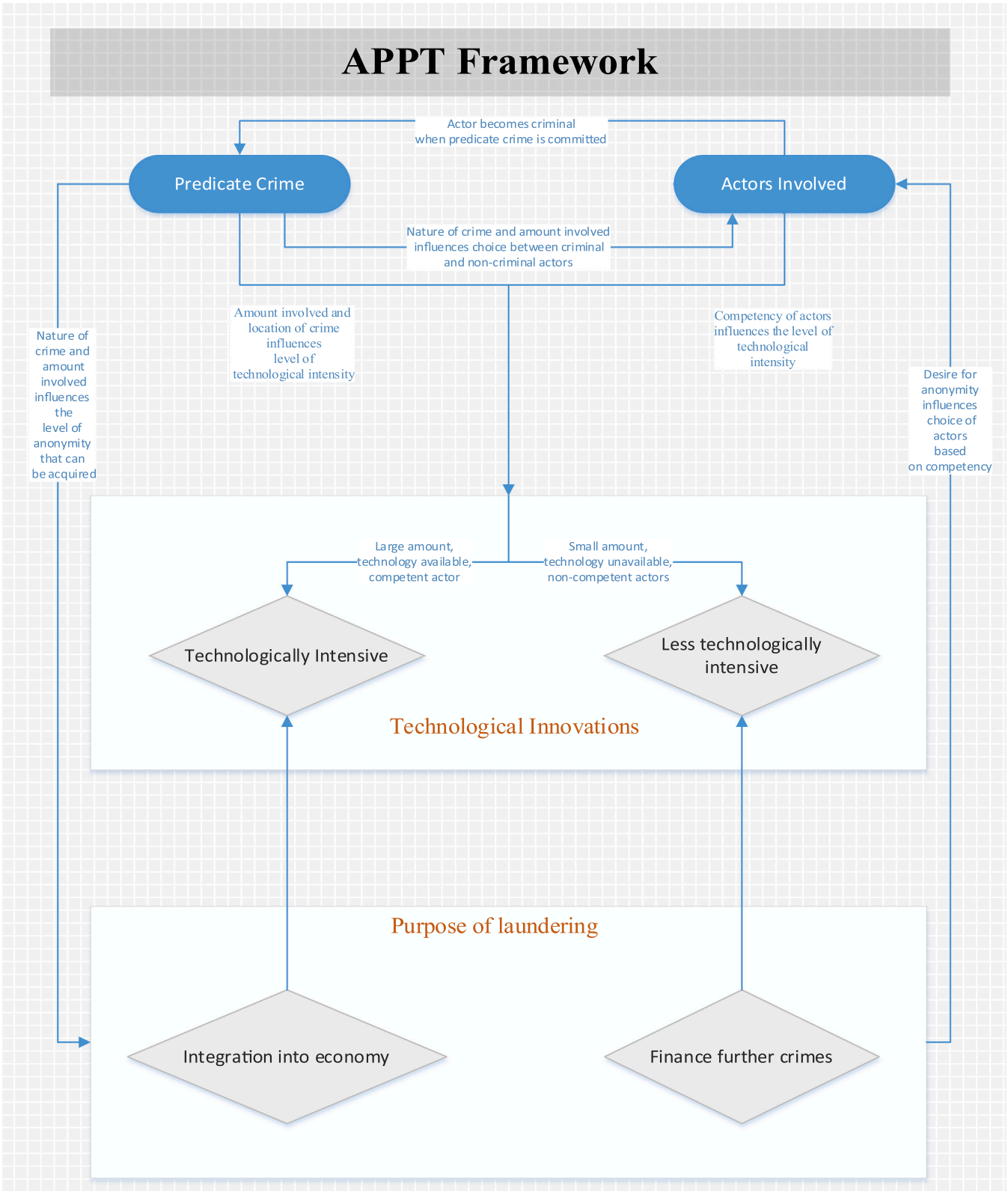

Fig. 1. The Developed APPT Framework For Money Laundering.

4. Why a new model?

As money launderers become more sophisticated in laundering illicit funds, the traditional approaches to detecting and preventing money laundering are becoming less effective (Yeoh, 2019; Zdanowicz, 2004, 2009). As a result, a framework for determining the possible adoption of money laundering technique(s) can be helpful. Such a framework encourages a proactive response and aids in overcoming limitations associated with reliance on rule-based systems and manual reviews, which are subject to error and unable to understand the complexity and diversity of money laundering schemes (Teichmann, 2020, 2017; Wronka, 2021; Yara, 2018; Young, 2016). In addition, such

a framework could assist in bridging the gap between academics and practitioners by providing a streamlined framework that could facilitate the exchange of ideas and best practices and contribute to developing more effective solutions for combating money laundering.

A framework incorporating multidisciplinary insights enhances understanding of the choice of money laundering technique(s) that may be adopted. For instance, the rational decision-making of a money launderer can be explained through the concepts in systems theory (Demetis, 2018), especially structural coupling, which acknowledges the codependency between factors in a system (Luhmann et al., 2013; Maturana and Varela, 1987). In this context, the factors influencing the choice of laundering technique are interrelated, such as the purpose of laundering funds, the level of reliance on technological innovation, and the personnel used to accomplish the objective.

Similarly, Howieson (2005, 2018) states that practical wisdom, which is essential for sound professional judgment, can be developed by providing training in the practical skill of decision-making. The proposed APPT framework facilitates this by encouraging critical and strategic thinking skills when investigating money laundering cases; the need for developing such skills has been emphasized by Davis et al. (2010). Digabriele (2008) and Van Akkeren et al. (2016) also highlighted a need for flexible, agile approaches rather than a structured plan. The APPT framework contributes in this way by facilitating a better understanding of the thought process of a launderer in choosing techniques to launder funds rather than encouraging the dissemination of some type of structured plan. Such an understanding allows the use of an appropriate mechanism to detect money laundering once a predicate crime has been committed. For instance, the COVID-19 pandemic and resulting supply-chain constraints forced drug cartels to think of alternative techniques to trade-based money laundering to move illicit funds. The framework enables forensic experts to incorporate such social and environmental factors which may form the basis for understanding the choice of technique adopted by launderers. It develops upon the traditional stages of money laundering, describing the process which fails to consider the social and environmental factors in coming up with a proactive detection mechanism (Blankstein et al., 2020).

5. Development of the new APPT framework

Looking at one factor in isolation as being critical in influencing the choice of money laundering techniques can be misleading, as much depends on intersections of the characteristics of the crime, the actors, the kind of technology available, and the purpose of laundering. The use of technology is influenced by the amount involved as part of the predicate crime. If the amount is large, the need to use virtual currencies and other innovative technologies may arise as a potential medium to launder funds. Another vital factor is the purpose of laundering. If the aim is to commit another crime, such as related to terrorism, the technology adopted may be different. For instance, the choice of using online gaming to launder funds was influenced by the amount involved and whether the final objective was to execute an act of terror (Samantha Maitland Irwin et al., 2012b). The choice of technological innovation is influenced by the availability of technology in a particular location. Additionally, the capability of actors involved in the predicate crime or that of non-criminal actors needs to be considered while evaluating the possible choice of technology that could be adopted to launder funds. These factors are interrelated and interdependent, except in scenarios where the end objective is destruction and rational decision-making is absent. Such an approach would allow bypassing the limitational oversight offered by theories such as the routine activity theory (Clarke and Felson, 1993; Cohen and Felson, 1979; Felson and Boba, 2010) in attempting to explain the motivation for a crime.

The proposed APPT framework (as presented in Fig. 1 below) addresses the interdependence between factors to explain why a particular approach was adopted to launder funds. The interconnected nature of the factors described in the framework aligns with the views of Gilmour (2016a, 2016b). He suggested that acknowledging this interconnection would increase a holistic understanding of the money laundering environment. With this better understanding, it would become possible to consider the situation and circumstances influencing the decisions of the relevant actors.

The predicate crime affects the decision of who is going to launder funds. Notwithstanding cases where the money may be from a legitimate source, the decision of criminal and non-criminal actors to launder funds is influenced by the purpose of laundering. It may be to perpetrate another crime or to obtain clean funds for legitimate use. Further, if the amount involved is substantial and the criminal actors do not possess the required capabilities and technological expertise, non-criminal actors are included to aid in laundering funds.

Concerning the purpose of laundering funds (as presented in the APPT framework), if it is to commit further illicit acts, such as funding a terrorist attack, discerning the money trail between the predicate crime and the laundering of funds may not be the primary concern. On the other hand, if the aim is to integrate the funds into the economy and give them a legitimate appearance, using sophisticated and complex techniques is common, making the money trail challenging to follow. The decision to use laundered funds to finance further crimes or give the funds a legitimate appearance is influenced by the actors' ideologies, a critical factor emphasized by Kranacher et al. (2011).

Concerning the use of technological innovations, as shown in the APPT framework and based on the literature discussed above, if the predicate crime involves laundering small amounts of funds, then the use of less technologically intensive techniques may suffice. In contrast, virtual currency transactions may be used for laundering larger amounts. If the purpose is to ensure anonymity, more complicated technological innovations are used, requiring the actors to be experts in such technologies, and their availability becomes critical.

Overall, deciding on techniques to launder funds could be considered a problem for a money launderer as depicted in the APPT framework. The decision is ultimately influenced by factors that encompass the pressures, constraints, beliefs, values, and assumptions of the problem solver: in this case, the money launderer, in the environment containing the problem. It allows for an element of subjectivity in terms of risk-taking ability on the part of a money launderer. Additionally, the possibility increases of interaction between various factors, the competence of the problem solver, the evolving nature of the problem as well as adapting to the change (Mumford, 1998). It was Ashby (1961) who stated that upon encountering a complicated situation with multiple variables, establishing a link between variables could aid in viewing and addressing the problem as a single unit.

Further, just like a complex problem in a real-life situation (Stevens and Churchman, 1975), the decision to adopt a particular technique to launder funds is accompanied by difficulties and ambiguities, many of which must be accepted in making the decision as depicted in the APPT framework. Moreover, as Beer (1985) points out in the context of problem-solving, the decision to choose among techniques involves a hierarchy of activities, namely, the identification of routine tasks, assessment of difficulties, identification of factors to be prioritized, and continuous evaluation and monitoring of the effectiveness of the technique or mix of techniques adopted to launder funds.

Consequently, the rational decision-making of a money launderer can be substantiated through the concepts in systems theory, such as structural coupling, which acknowledges the codependency between factors in a system – in this context, the factors influencing the choice of laundering technique (Luhmann et al., 2013; Maturana and Varela, 1987). This paper is in line with Demetis (2018), who also acknowledges the call from Mumford (1998) to reconsider money laundering from a systems theory viewpoint to gain additional insights.

The developed APPT framework can be used to explain the modus operandi adopted by launderers, and the relevance is substantiated in the cases mentioned below. The cases highlight the connection and

coevolution between the factors and their influence on the final decision (choice of technique or techniques to launder) (Luhmann et al., 2013; Maturana and Varela, 1987).

6. Application of APPT money laundering framework

Numerous examples of money laundering scandals exist, such as the Troika Laundromat, the Azerbaijani Laundromat, and Danske Bank (Bjerregaard and Kirchmaier, 2019; OCCRP, 2019a, 2019b). This paper uses a selection of real cases to substantiate the applicability of the current framework. The criteria for choosing the cases below include either (i) the involvement of a regulatory authority in investigating such cases or (ii) the scandal attracted notable attention from the media and involved a substantial financial sum. The cases were chosen based on their geographical and methodological diversity and notoriety; that is, they are generally well-known cases. There is, of course, the risk of possible selection bias present as with any approach that does not consider all cases. Still, this selection provides an excellent landscape for applying the framework. The purpose is to demonstrate the framework's applicability to cases with distinct nature, purpose, and magnitude. The chosen cases are the Troika Laundromat, a case involving underground banking to launder drug profits, a case involving raising funds for terrorism, and Bestmixer.io. Using real-world cases to highlight the framework's relevance would be useful to provide evidence of its applicability and something that can be considered in more detail for future research.

6.1. The troika laundromat

The Troika Laundromat refers to a group of shell companies collectively operated by an independent arm of Troika Dialog, a Russian investment bank, to move an estimated USD 8.8 billion from Russia to the West (OCCRP, 2019b). A complex web of transactions was created between the network companies to blend the money derived from illicit sources with legitimately earned private wealth. These companies used fake contracts to move wealth across borders (Garside, 2019). The laundromat paved the way for Russian oligarchs and politicians to use laundered funds to purchase luxury goods and real estate and make other investments. The laundromat scheme depended on a broad range of actors, including the staff at Troika Dialog, who created a complex trail of money to trace while keeping the actual beneficial owners out of the reach of the authorities. The scheme's complexity is evident from the existence of more than 1.3 million financial documents relating to the activities of Troika Dialog and the Lithuanian lender Ukio Bank (Perryer, 2019).

The effectiveness of the Troika Laundromat demonstrates the interrelatedness and interdependence between the factors of the proposed framework, namely, the actors involved, predicate crime, purpose of laundering, and technological innovation. The expertise of actors was critical for creating a complex web of transactions between shell companies, thus disguising the identity of beneficial owners. The predicate crimes involved a range of illicit activities that generated huge amounts of illicit funds, as reflected by the magnitude of the money laundering scandal. This volume, which was made possible by environmental and social factors, influenced the choice of money laundering techniques (including shell companies, fake loans, trade-based money laundering, and complicit banks), which ultimately exploited enforcement, regulatory, and investigation weaknesses in their respective regions. The purpose of laundering was to integrate the generated illicit funds with legitimate funds to prevent drawing the attention of law enforcement agencies, which also plays a critical role in the adoption of money laundering technique(s). Finally, technological advancement has been critical in having access to a range of financial instruments and actors, thus influencing the adoption of the money laundering technique(s). In light of the concepts of public value, structural coupling, stakeholder theory, and cost-benefit analysis undertaken by the launderer, support exists for the interconnectedness between all these factors influencing the techniques adopted to launder funds.

6.2. Use of underground banking to launder drug profits[1]

As part of a Lebanon-based international crime syndicate, one of the syndicate members used informal money transfer systems, known as 'hawala', to transfer drug profits to two other syndicate members residing in Australia. The first member, an Iranian national, received over AUD 1 million in cash, which was further sent to high-risk jurisdictions. The second member, an Australian citizen, was reported to have transferred an amount totaling AUD 244,000 to several countries. A joint initiative by the investigative agencies with assistance from the Australian Transaction Reports and Analysis Centre (AUSTRAC hereafter) and the reporting entities was able to identify the crime syndicate members and arrest them. As part of the investigation, another member was identified in possession of cash, diamonds, and casino chips, and was eventually arrested. The banks provided reports on the movement of large, unexplained sums of money, which were analyzed by AUSTRAC to provide financial intelligence to investigative authorities (2020).

The above case validates the applicability of the APPT framework by depicting the connection and coevolution between the pillars of the framework. The actors involved were members of an international crime syndicate lacking the expertise to implement sophisticated money laundering typologies, thus resorting to known ones. The predicate crime, drug trafficking, required the generated illicit funds to be laundered, thereby influencing the purpose of laundering. Finally, hawala, a traditional money laundering typology, was adapted to modern-day requirements via technological innovation, allowing for the quick transfer of funds. The interrelatedness and interdependence between the actors involved, purpose of laundering, predicate crime, and technology influence the adopted typologies. Understanding the process vis-à-vis the APPT framework enables practitioners to map what happened and understand the interconnectedness of each pillar; this has implications for future investigations as indices and patterns can be drawn out.

6.3. Raising funds for acts of terrorism[2]

A joint investigation led to the identification and eventual arrest of people in Sydney and Melbourne who were planning a terrorist attack. The investigation of the Sydney-based suspects revealed their income to be the primary source of their funding. In contrast, the Melbourne-based suspects relied upon donations to a fund for the heinous act. The investigation revealed that the value of funds at the time of arrest was AUD 19,000. In addition, the suspects also relied upon credit card fraud schemes and fundraising activities to raise funds for the act (AUSTRAC, 2014).

In this case, the actors involved were terrorists relying on either donations or their personal income to fund terror activities. The predicate crime associated with the movement of funds to finance terror activities included credit card fraud schemes. Unlike other cases, in this case, the purpose of laundering was to fund the acts of terror and not disguise the source of funds. Consequently, there is a limited implementation of technology, primarily related to generating funds via credit card fraud schemes. The lack of sophistication involved in adopting a typology to move funds is influenced by the interconnectedness of the factors of the APPT framework. By mapping this process in line with the APPT framework, it is possible to see how resources should be allocated due to varying legal and regulatory

[1] The name of the crime syndicate and the people involved has been kept anonymous in the public domain.

[2] Key details including people's names have been kept anonymous.

frameworks, the investigative approach, and overall risk assessment. This enables the development of appropriate mitigation strategies.

6.4. Bestmixer.io

Bestmixer, a cryptocurrency mixer (a term applied to services responsible for blending cryptocurrencies from different sources), was used to obscure the trail of funds to its source (Europol, 2019). The users would use the services provided by the dark web firm to avoid due diligence by blending illicit and lawful cryptocurrencies. The service was dismantled collectively through the works of the Dutch Fiscal Information and Investigation Service (FIOD), Europol, and other authorities, working with support from McAfee, a cybersecurity firm (Vedrenne, 2023). The demand for such an opportunity is evident because Bestmixer, during its one year in operation, mixed almost $200 million in bitcoin (Europol, 2019; Vedrenne, 2023).

The actors involved in this case included individuals with the expertise to use cryptocurrency mixers to disguise illicit funds with legitimate funds. The predicate crime involved a range of illicit activities generating massive funds that needed laundering. The purpose was to hide the source of the illicit funds generated, and it relied on technological innovation in the form of cryptocurrency mixers to complicate the trail of funds. This case highlights the interrelatedness and interdependence of the factors of the APPT framework, along with the evolution of money laundering typologies. Given its use of 'new' technology, it also supports reimagined frameworks to mitigate money laundering.

6.5. The cases and the APPT

The above cases highlight the sophistication and complexity of techniques adopted in laundering funds, depending upon various factors. In line with the previous academic literature (Wolfe and Hermanson, 2004; Ainsworth, 2013; McCarthy et al., 2015) emphasizing the role of actors influencing the choice of money laundering technique(s), in the case of the Troika Laundromat, sophisticated techniques were used to hide the ultimate owners and obscure the money trail, as is evident from the use of shell companies and a complex web of transactions. It involved a range of professional actors, such as lawyers, accountants, and company service providers, to execute the scheme. Similarly, in the case of Bestmixer, the FinTech expertise of the actors involved played a critical role in influencing the method adopted to move funds.

In contrast, in the case of a crime syndicate, the syndicate members, lacking the expertise to use sophisticated methods to complicate the money trail, laundered the funds themselves using informal transfer systems and available banking facilities. Considering money laundering from a rational choice perspective proposed by Gilmour (2016a), it can be considered a risk-diversification process involving pragmatic decision-making by the launderers. However, in the case of financing acts of terrorism, the primary objective is not to disguise funds but to cause harm and is driven by the ideological beliefs of the perpetrators (Compin, 2008; Samantha Maitland Irwin et al., 2012a), and consequently, the level of financial sophistication adopted to cover the trail was minimal. This has implications for the type of investigation that needs to be undertaken to intercept the trail.

In line with the views of Samantha Maitland Irwin et al. (2012a), Cornish and Clarke (1987), Marteache et al. (2015), and Bajada (2017), the nature of predicate crime influences the choice of money laundering technique(s). For instance, the large volume of illicit funds, such as those observed in the cases of the Troika Laundromat, Bestmixer, and the crime syndicate, influenced the efforts made to disguise the illicit origin of funds. Conversely, in the case of terror financing, where the amount of generated funds was low, less sophisticated techniques were needed to disguise the funds. The purpose of laundering for the Troika Laundromat, Bestmixer, and the crime syndicate was to integrate the generated illicit funds within the legitimate economy, which played a critical role in adopting the money laundering technique(s) (Compin, 2008; Hobbs et al., 2005; Vittori, 2011; Krieger, 2011). However, in line with Compin (2008) and Samantha Maitland Irwin et al. (2012a), for the case of terrorism financing, the purpose of laundering was not to disguise funds but cause harm, and consequently, detection was not a primary concern, as reflected in the choice of money laundering technique.

Furthermore, in line with Barone and Schneider (2018) and Richet (2013), technological advancement has been critical in influencing the adoption of money laundering technique(s). The Bestmixer case directs attention toward a need to focus on the new opportunities becoming available to money launderers following the advent of technology. It reiterates the notion of cryptocurrencies being a conduit of illicit financial flows, particularly where the services to access these virtual currencies and the actors proficient in it are available. Similarly, technological advancements in the financial domain have influenced access to various financial instruments and actors, as observed in the Troika Laundromat case. For the crime syndicate case, a traditional methodology has been adapted to modern-day requirements with the help of technology. Finally, in the case of terrorism financing, technological advancement paved the way for a new opportunity to commit crimes in the form of credit card fraud. It should be noted that based on the information available in these cases, the extent to which technological innovations were used could not be extracted, but given the prominence of the use of virtual currencies, credit cards and online banking, ignoring such a possibility would be inappropriate. While the rational choice perspective, as proposed by Gilmour (2016a), is insufficient to explain the choice of laundering technique, when used in combination with the concepts of public value, structural coupling, stakeholder theory, and cost-benefit analysis, it supports the interconnectedness between all these factors influencing the techniques adopted to launder funds.

These cases highlight the need to consider a combination of factors to determine the possible money laundering techniques that may be adopted to launder funds. Until now, there has been ambiguities around predicting them (Canhoto and Backhouse, 2007). These ambiguities emanated from a wide range of predicate crimes, the actors involved, a lack of information-sharing and the evolution of techniques resulting from technology (Bell, 2002; Canhoto and Backhouse, 2007; Backhouse et al., 2005). The proposed APPT framework's purpose is twofold – by incorporating a range of factors that need to be considered to understand the possible mechanism illicit actors adopt to launder funds, the framework explains the modus operandi adopted once the predicate crime has been identified. Such knowledge can be used to help understand past instances of money laundering. Moreover, such financial crime frameworks could increase the value of relevant educational programs and improve investigative skills by training neophytes and experienced practitioners to think and respond appropriately. That said, the empirical validity of the framework is worth considering in future research.

7. Conclusion

This paper has proposed the APPT framework to explain the factors influencing the techniques adopted to launder funds. Any model of financial crime must recognize its multifaceted nature and the factors that influence it. The APPT framework highlights the interaction between factors, using existing theories and observations, that influence the choices of both individuals and organizations to accomplish the purpose of laundering. The applicability of the APPT framework was then demonstrated through real-life cases. The framework proposed in this paper differs from theories solely focusing on criminal actors such as self-control theory (Walters and Bradley, 2019) and individual trait theory (Schechter, 2004). In addition to individual factors, it draws attention to social and environmental factors influencing a person's

decision-making process (Clarke and Cornish, 1985; Piquero et al., 2002) in adopting techniques to launder funds.

The rational decision-making of a money launderer (Gilmour, 2016a) can be substantiated through the concepts in systems theory, such as structural coupling that acknowledges the codependency between factors in a system – in this context, the factors influencing the choice of laundering technique (Luhmann et al., 2013; Maturana and Varela, 1987). This paper is consistent with Demetis (2018), who also acknowledges the call from Mumford (1998) to reconsider money laundering from a systems theory viewpoint to gain additional insights.

The APPT framework has implications for neophytes, experienced practitioners, and institutions teaching financial crime. For neophytes, qualifications incorporating a wide range of topics with opportunities to develop phronesis may increase their employment opportunities in the field. Among experienced practitioners, such knowledge would aid in exercising professional judgment to develop appropriate detection and deterrence mechanisms. In educational institutions, such a framework would suggest incorporating pedagogical techniques to improve the content value and encourage the development of skills valued by academics and practitioners. The APPT framework can also be leveraged. Future researchers could extend the present work by empirically examining the differences in applicability of the APPT framework for developed and developing countries. The framework can also be applied to new money laundering cases to help uncover interesting insights. Additionally, a more detailed understanding of the motivation behind the participation of non-criminal actors in the act of money laundering could help to improve the framework.

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Declaration of Competing Interest

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