Determinants of Social Media Usage in Illegal Immigration: Evidence from Arab World

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Abstract:

This research explores the dynamics of illegal immigration and smuggling activities facilitated through Facebook groups, aiming to understand the determinants of this new media usage in the context of illegal immigration among the Arab population. By applying and modifying the Social Network Sites Adoption (SNSA) Model, the research identifies key determinants influencing the use of social media for these illegal activities. Data was collected through an e-survey of 415 Arab participants—from twelve Arab countries—who are involved in illegal immigration groups on Facebook, using a structural equation modeling technique. The findings underscore the significant role of trust and perceived usefulness in shaping attitudes and actual usage, while perceived risks negatively impact attitudes. The results reveal that perceived usefulness, perceived ease of use, trust, and perceived risk are all determinants of illegal immigrants' use of Facebook for illegal immigration, supporting the mediating role of attitude in the proposed model. The study provides crucial insights into the social media behaviors of illegal immigrants, contributing to the broader understanding of digital platforms' roles in facilitating such activities.

Keywords: Illegal Immigration, social media, Arab Youth, Social Network Sites Adoption (SNSA) Model, Structural equation modeling.

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مُحددِّات استخدام وسائل التواصل الاجتماعي في الهجرة غير الشرعية: أدلة من العالم العربي

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ملخص الدراسة:

يستكشف هذا البحث ديناميكيات الهجرة غير الشرعية وأنشطة تهريب المهاجرين التي تتم من خلال مجموعات فيسبوك المخصصَّة لهذا الغرض، بهدف فهم مُحددِّات استخدام وسائل الإعلام الجديدة في سياق الهجرة غير الشرعية بين العرب، ويحدد البحث العوامل الرئيسة التي تؤثِّر في استخدام وسائل التواصل الاجتماعي في هذه الأنشطة غير القانونية، من خلال تطبيق وتعديل نموذج تبني محتوى مواقع التواصل الاجتماعي (SNSA)، وقد تم جمع البيانات من خلال استبيان إلكتروني طُبِقَ على ٤١٥ مشاركًا عربيًا من اثنتي عشرة دولة عربية، من المهاجرين غير الشرعيين (الفعليين أو المحتملين) المشاركين في مجموعات الهجرة غير الشرعية وتهريب المهاجرين على فيسبوك، بالاعتماد على تقنية نمذجة المعادلات الهيكلية. وسلطت النتائج الضوء على الدور المهم للثقة، والفائدة المتصوَّرة، في تشكيل الاتجاهات نحو هذه المجموعات، ومن ثم الاستخدام الفعلي لها، بينما كان تأثير المخاطر المتصوَّرة سلبيًا في هذه الاتجاهات، وكشفت النتائج أن الفائدة المتصوَّرة، وسهولة الاستخدام المتصوَّرة، والثقة، والمخاطر المتصوَّرة، جميعها محددِّات لاستخدام المهاجرين غير الشرعيين لمجموعات فيسبوك في الهجرة غير الشرعية، كما دعمت النتائج الدور الوسيط للاتجاهات في النموذج المُقترح. ويقدم البحث رؤى مهمة حول استخدام وسائل التواصل الاجتماعي بين المهاجرين غير الشرعيين، مما يساهم في فهم أوسع لأدوار المنصات الرقمية في تسهيل هذه الأنشطة الإجرامية.

الكلمات الدالة: الهجرة غير الشرعية، وسائل التواصل الاجتماعي، الشباب العربي، نموذج تبني محتوى مواقع التواصل الاجتماعي، نمذجة المعادلات الهيكلية.

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Introduction:

Successive developments in social networks, along with their numerous advantages, have contributed to their widespread adoption. With the global population reaching 8.08 billion at the start of 2024, more than half of these individuals are active on social media, totaling 5.04 billion users worldwide (We Are Social, 2024). Facebook is one of the most important social media platforms in the world (We Are Social, 2014). With 2.958 billion active users worldwide in January 2023 (Statista, 2023), this number increased one year later to 3.049 billion active users around the world in January 2024 (We Are Social, 2024). The advent of information and communication technologies (ICTs) has revolutionized the way people connect, share information, and conduct various activities across the globe. Among the myriad uses of these technologies, social media platforms have emerged as powerful tools for facilitating communication and collaboration. While these platforms offer numerous benefits, their potential for misuse cannot be overlooked. In recent years, social media has been increasingly exploited for illegal activities, notably illegal immigration and smuggling. Illegal immigration and smuggling are complex global issues that pose serious threats to national security, social stability, and economic development. Traditionally, these activities were coordinated through clandestine networks and face-to-face interactions. However, the advent of social media has introduced new dynamics, allowing illegal immigrants and smugglers to connect, share information, and coordinate their activities more efficiently and securely. The increasing reliance on social media by illegal immigrants and smugglers, especially among Arab immigrants, and the appearance of numerous groups and pages that promote and facilitate illegal immigration raise critical questions about the factors influencing these actors' leverage and usage of social media for illegal immigration. This study aims to address these questions by applying and modifying the Social Network Sites Adoption *(SNSA)* Model to the context of illegal immigration and smuggling, examining the use of social media among Arab illegal immigrants, and providing a nuanced understanding of the factors driving these activities and their broader implications.

Dependence of Illegal Immigrants and Smugglers on Social Media:

The use of the internet and social networks has been accompanied by an increase in the exploitation of this technology for criminal activities exceeding national borders and territories with its negative impact (Tan et al., 2014), which is one of the most prominent criminal activities facilitated by ICTs.

Chinese social media users have attributed illegal immigration to the developing world due to Western interventions (Gan, 2020). Unemployment and low wages are the most important factors in driving and attracting the illegal immigration of young people (Mebarek, 2018). Immigrants in Europe provide an ideal image of the continent through social media (Herbert and Ghoulidi, 2019). Skana (2024) confirmed that the image painted by expatriates and shared through social networks about life in foreign countries is a primary reason for the pursuit of illegal immigration, which the researcher termed the "Imitation Theory."

Social networks play a significant role in illegal immigration processes and are considered tools for reducing information shortages (Timoshkin, 2019). Immigrants use social media through smartphones to obtain information and seek advice from people living in destination countries (Dekker et al., 2018; Alencar, 2018; Komito, 2011). Social media has replaced traditional media as the primary source of information, especially for young people (Herbert and Ghoulidi, 2019). These are information channels that immigrants depend on for their immigration decisions and for collecting information (Dekker et al., 2018; Jauhiainen and Tedeschi, 2021).

They are also relatively cheap and easily accessible means of communication, and despite their low cost, they are rich in multimedia content (Dekker et al., 2018). This explains the tremendous growth in the use of social media for illegal immigration and immigrant smuggling in recent years. Social media platforms also serve as very safe means for both immigrants and their smugglers, enabling them to hide their identities, encrypt their communications, and hide behind screens. Smugglers can reach larger groups of targeted immigrants,

and the ease of communication between immigrants and their smugglers enables the two parties of the crime to coordinate and communicate effectively, especially about changes in immigration routes (European Commission, 2016).

The *International Criminal Police Organization, "Interpol*," confirms that most smuggling operations are agreed upon through the internet. Criminal groups use both the normal and hidden web to recruit people, gather real-time information about routes, and inform and promote their services to targets (Interpol, 2019). Experts have attributed the reasons behind the influx of 12,000 young Albanians to Britain in 2022 to their reliance on social networks (Skana, 2024).

Social media platforms are widely used by smugglers to share information about their services (European Commission, 2015). Smugglers benefit from the speed of these platforms to advertise their journeys and reach a larger number of potential customers (Diba et al., 2019). Immigrants rely on social media to find smugglers (Dekker et al., 2018; Alencar, 2018; Komito, 2011) as a logical consequence of smugglers' reliance on social media to promote smuggling journeys to Europe. It was natural for the dependence to become reciprocal (Dekker and Engbersen, 2014). The use of social networks has increased in immigrant smuggling and human trafficking. These networks also perform the function of exchanging information about security strategies and measures used by security forces (Casagran, 2018), advising on the degree to which security forces apply anti-immigration policies, how to regulate a person's legal status, and avoid deportation (Herbert and Ghoulidi, 2019). Immigrants' reliance on social media varies according to nationality, ethnicity, level of education, and the availability of the Internet (Dekker and Engbersen, 2014). Social media has become a lifeline for illegal immigrants (Interpol, 2019). Communication and information sharing among illegal immigrants regarding smuggling routes through Facebook and other social platforms are some of the strengths of these technological platforms (ProQuest, 2021). Social media has changed the nature of immigration networks, facilitating illegal immigration despite the limitations of such networks, such as the digital gap and reduced trust in virtual links (Dekker et al., 2018).

Consequences of Using Social Media for Immigrant Smuggling:

Naturally, the increased use of social media by smugglers and immigrants has a real impact on illegal immigration. Undoubtedly, the ease of communication between illegal immigrants, as well as between them and their smugglers, in addition to the ease of access to real-time information, increases the ability to respond and adapt to security conditions in both transit and destination countries. This, in turn, leads to an increased volume of operations, increased efficiency and effectiveness, difficulty tracking by security services, and difficulty in finding evidence (European Commission, 2016).

Modern technology enables smugglers to respond quickly when there is a security alert or when they are being tracked by security forces, allowing them to change routes to avoid detection (Dekker & Engbersen, 2014). In particular, Facebook Inc., which owns WhatsApp, allows its users to share information about border crossings, even if they are illegal (ProQuest, 2021).

Immigrants may be misled (European Commission, 2016). Many immigrants fall under the pressure of duress and abandonment crimes, not to mention dangerous routes or unsuitable and overcrowded boats (Interpol, 2019). Information on social networks often leads to perilous journeys (Dekker and Engbersen, 2014). People smugglers share a lot of misinformation on social media (ProQuest, 2021), and immigrants who are dependent on social media are at greater risk of being abused and exploited (Dekker and Engbersen, 2014). Social media platforms represent enormous risks as entry points for criminal communities, offering dangerous routes (Timoshkin, 2019).

Given the aforementioned issues, the seriousness of using social media in illegal immigration and immigrant smuggling is evident. Therefore, it is necessary to identify the determinants of the use of social media as alternative media in such criminal activities through a proposed model developed based on the *SNSA* Model presented by Sledgianowski and Kulviwat (2008). This is discussed extensively in the theoretical framework and hypotheses section.

Problem Statement:

Illegal immigration and smuggling have increasingly been facilitated through social media platforms like Facebook. These groups not only provide critical information but also establish trust-based relationships between smugglers and migrants, raising significant concerns about their role in perpetuating these crimes. However, existing models of social media analysis do not adequately capture the unique dynamics of these illegal activities. There is a pressing need to develop a tailored model that considers the specific nature of illegal immigration and smuggling groups on social media, to understand the factors influencing Arab illegal migrants' engagement in these groups and affecting social media usage in illegal immigration. This is what this study aims to achieve.

Research Importance:

Understanding the role of social media in facilitating illegal immigration is crucial for developing effective interventions and policies. This research provides a detailed analysis of how trust, usefulness, and perceived risks influence migrants' behaviors on Facebook. By uncovering these dynamics, the study offers valuable insights for law enforcement, policymakers, and social media companies to address and mitigate the risks associated with illegal immigration and smuggling activities. It sheds light on the significant yet underexplored role of social media in illegal activities, particularly immigration and smuggling. The study's proposed model offers a framework for further research on the use of social media in various illegal activities.

Research Objectives:

- To identify the key factors that influence the use of social media for illegal immigration and smuggling activities.

- To develop a conceptual model tailored to the study of illegal immigration and smuggling groups on Facebook.

- To investigate the role of trust in influencing attitudes towards these groups and their actual usage by migrants.

- To assess the impact of perceived usefulness and ease of use on migrants' engagement with these groups.

- To examine the effect of perceived risks on attitudes and actual usage of illegal immigration groups.

- To analyze the relationship between attitudes towards these groups and their actual usage by migrants.

Research Questions:

- What are the key determinants influencing the use of social media for illegal immigration and smuggling?

- How does perceived usefulness impact the engagement of illegal immigrants with these groups?

- What is the effect of perceived ease of use on migrants' attitudes towards smuggling groups and their actual usage of these groups?

- How does trust affect attitudes and actual usage of illegal immigration groups?

- How do perceived risks affect attitudes and actual usage of illegal immigration groups?

- Is there a mediating role of attitude between all proposed factors (perceived risks, trust, usefulness, and ease of use) and actual usage?

Theoretical Framework and Hypotheses:

This article is based on the *Social Network Sites Adoption Model (SNSA),* which examines factors that determine social media use (Sledgianowski and Kulviwat, 2008). The model helps to understand the determinants and factors that influence people's adoption of the content of these sites and identifies these factors (Playfulness, Critical Mass, Trust, Normative Pressure, Perceived Ease of Use, and Usefulness) and the extent of their impact on the intention to use and actual usage (Sledgianowski and Kulviwat, 2009). These determinants and effects pre-exist in the actual use of social media, and they all have a direct impact on both intention and actual usage (Sledgianowski and Kulviwat, 2008).
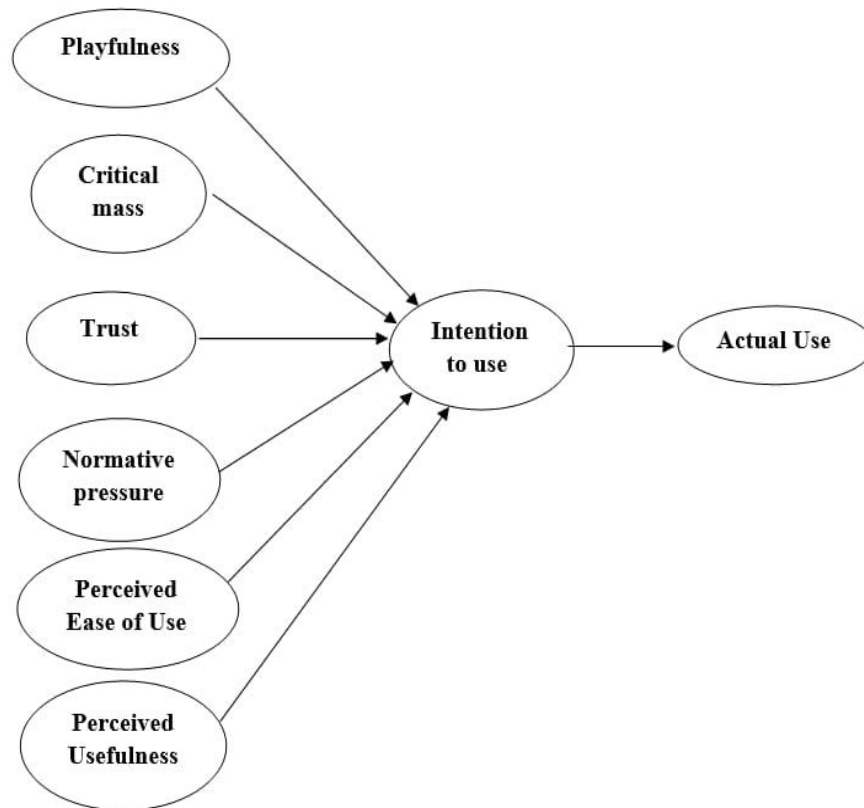
Figure 1. Social Network Sites Adoption Model

However, I argue that this model should be developed according to the nature of this study, since illegal immigration and smuggling groups are criminal and not ordinary pages or groups on social networking sites. By following up and joining these groups, they contain other illegal activities as well as the smuggling of migrants, especially in groups created by smugglers. Therefore, the researcher argues for some minor changes in the *SNSA* model. The developed model is expressed as follows:
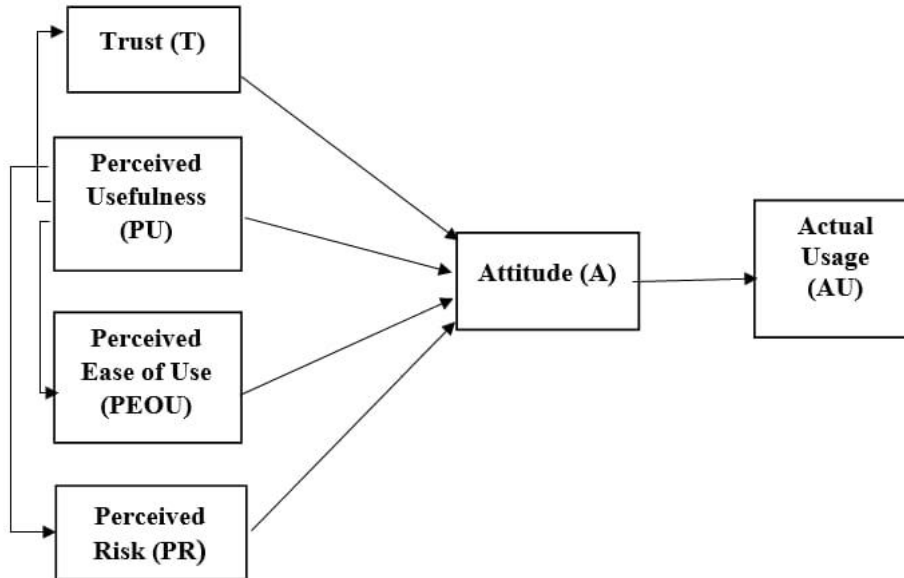
Figure 2. Proposed Research Model.

Trust:

Undoubtedly, the reliance of illegal immigrants on social media to obtain the necessary information to make migration decisions requires trust in these means, which leads to trust in the information they provide. The reliance on social media to find a smuggler requires even more trust. As a result of the researcher's observations of illegal immigration groups on social media, there have been deals and contacts between smugglers and illegal immigrants, which suggest mutual trust and confirm Salt and Stein's (1997) proposal. In their theory, which perceives migration as a trade with both legal and illegal aspects, migrants deal with smugglers as clients or customers requesting the service or commodity they want. As shown in *Figure (3),* an illegal immigrant asks for an honest smuggler to smuggle a family to Turkey. Such a 'post' undoubtedly requires a lot of trust, making the illegal immigrant risk his family's life and the money paid to the smuggler, which, depending on the circumstances of the illegal Arab immigrants, may be all they own and may even be all borrowed for immigration.

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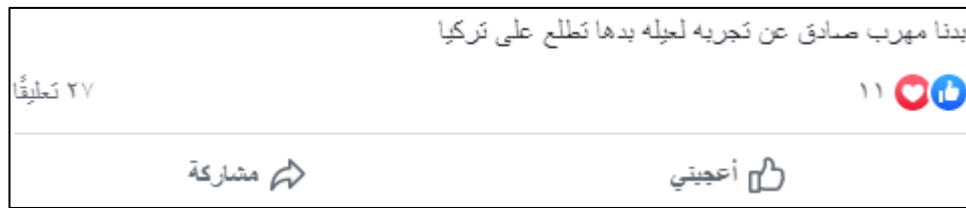
Figure 3. Facebook 'Post' from an Illegal Immigration Group
The researcher cropped the name and profile picture.

Tang and Liu (2015) argued trust in social media and explained that:
"Trust provides evidence about with whom we can trust to share
information and from whom we can accept information without
additional verification." The role of trust in providing information to
social media users cannot be denied regardless of the nature of the
information (Tang and Liu, 2015).

Hansen et al. (2018) also found that perceived trust plays an important
role as an antecedent in user decision-making and that it has a
significant effect on behavioral intention. Al-Qaysi et al. (2023)
confirmed that perceived trust is the most studied antecedent of
behavioral intention and one of the most studied factors as external
factors affecting the adoption of social media content, all of which
correspond to what the *SNSA Model* states: trust is one of the reasons
for the tendency to use Social Network Sites. Romero et al. (2011)
also confirmed that trust has a direct positive effect on attitude.

This leads to the first hypothesis (H1):

**H1: Trust in illegal immigration and smuggling groups on
Facebook has a positive and significant effect on attitudes towards
these groups.**

Perceived Usefulness:

 Illegal immigrants rely on social media to obtain information before
and during their migration journey, and even after successfully
reaching their destination country. Immigrants also use social media to
fill the social capital deficit in the host country (Alencar, 2018;
Timoshkin, 2019) and to contact their families (see Dekker et al.,
2018; Alencar, 2018; Komito, 2011). They also use them to reach and
communicate with smugglers, as argued by Diba et al. (2019). Social

networks are major tools for immigrants and smugglers to exchange information on migration routes, border closures, services, and travel costs (Diba et al., 2019).

According to Davis (1985), perceived usefulness (in this study) is the extent to which an illegal immigrant would believe that his use of illegal immigration groups on Facebook would help him achieve his goals. As mentioned by Castañeda et al. (2007), perceived usefulness is the main determinant of using any website (in our case, illegal immigration groups on Facebook) and is a major determinant of people's intentions to use computers (Davis et al., 1989). Romero et al. (2011) proved that perceived usefulness has a direct positive effect on attitudes towards the site. Labib and Mostafa (2015) showed that perceived usefulness has a significant effect on undergraduate students' intentions to use social networks and an indirect effect through attitude. Qalati et al. (2021) found an effect of perceived usefulness on adopting social media content, and Dahnil et al. (2014) found that perceived usefulness has a direct positive effect on end-user behavior towards e-marketing.

Despite the importance of ease of use, perceived usefulness remains the most important. Users may have some difficulty in exchange for the usefulness they expect to achieve, while the ease of the sites may be such ease will not compensate for perceived usefulness (Davis et al., 1989). I argue that in the case of illegal immigrants, the perceived usefulness of illegal immigration and smuggling groups can be the main determinant of their use, which has a direct effect on perceived risk, trust, and ease of use.

This leads to the second hypothesis (H2):

H2$_a$: The perceived usefulness of illegal immigration and smuggling groups on Facebook has a positive and significant effect on the Perceived Ease of Use.

H2$_b$: Perceived usefulness of illegal immigration and smuggling groups on Facebook has a positive and significant effect on trust.

H2$_c$: The perceived usefulness of illegal immigration and smuggling groups on Facebook has a positive and significant effect on the perceived risk.

H2$_d$: The perceived usefulness of illegal immigration and smuggling groups on Facebook has a positive and significant effect on attitudes toward these groups.

Perceived Risks:

As a key point related to the previous points regarding trust in illegal immigration groups, as well as the perceived usefulness of these sites, according to the researcher's follow-up of illegal immigration groups for six months from January 1 to June 30, 2019, the researcher noticed many scams from smugglers on those wishing to emigrate. There are warnings from members of the groups to each other against dealing with a specific smuggler who publishes smuggling offers via Facebook groups, and there are experiences of some illegal immigrants who are presented in illegal immigration groups regarding their exposure to fraud, theft, etc., indicating the awareness of illegal immigrants that there could be perceived risks of using illegal immigration groups.

According to Mowalad and Putit (2012), the initially perceived risks arise from psychology, which is any consumer action that would lead to unexpected and potentially unpleasant results. Therefore, consumer behavior is risky. Martín and Camarero (2009) also discussed perceived risks as an intermediate variable that can result in differences in perceptions, attitudes, and behavior depending on the level of risk perceived by the user. Jiang et al. (2021) found that self-perception of perceived risk determines the adoption of social media information, and perceived risk acts as a mediator between information quality and self-perception. That is, it mitigates the effects of information quality on self-perception. Hansen et al. (2018) also found that reliance on social media in decision-making depends on perceived risks, which play an important role as a precedent in user decision-making and has a direct effect on behavioral intention.

 The greater the perceived risks to the user, the weaker the relationship between intent and actual behavior (Mowalad and Putit, 2012). Perceived risks have a significant negative effect on perceived usefulness in users' adoption of technology (Hussein and Saad, 2016).

According to Romero et al. (2011), trust and ease of use of social networking sites reduce perceived risks.

This leads to the third hypothesis (H3):

H3: Perceived risk from illegal immigration and smuggling on Facebook has a negative and significant effect on attitudes towards these groups.

Perceived Ease of Use:

Perceived Ease of Use, (in this research), as suggested by Davis (1985), refers to the extent to which an illegal immigrant believes that using illegal immigration groups on Facebook will not require physical or mental effort. Labib and Mostafa (2015) confirmed a significant relationship between Perceived Ease of Use and the attitudes of undergraduate and graduate students towards networking sites. Similarly, Romero et al. (2011) found that Perceived Ease of Use positively affects attitudes towards social networking sites. Lin et al. (2011) discussed the existence of a negative correlation between the use of social media and perceived complexity.

Kokab et al. (2023) demonstrated that there is a statistically significant relationship between effort expectancy—which means the perceived ease of use—and behavioral intention to use social media. They found that effort expectancy has a significant positive effect on behavioral intention to use social media, explaining 41.1% of the variance in social media use. Dahnil et al. (2014) indicated that ease of use has a direct positive effect on end-user behavior towards e-marketing.

Davis et al. (1989) found that perceived ease of use is an important secondary determinant of people's intention to use computers. Davis (1989) also demonstrated that perceived usefulness and ease of use correlate with the use of a system, with the relationship between usefulness and usage being relatively stronger than that between ease of use and usage. Dixit and Prakash (2018) found that Perceived Ease of Use does not have a positive effect on attitudes towards social networking sites because the presence of social networking mobile applications is easier for respondents. For illegal immigrants, it is assumed that the ease of use factor is a determining factor in their use of illegal immigration groups, which is supposed to affect their

attitudes towards these groups and, consequently, their actual usage. 64.1% of the study sample has an average or below-average education level, making the absence of technological complexity one of the most important determinants and motivators for use.

This leads to the fourth hypothesis (H4):

H4: Perceived ease of use of illegal immigration and smuggling groups on Facebook has a positive and significant effect on attitudes toward these groups.

Attitude and Actual Usage:

Shivani Malhan (2015) defined attitude as "the degree to which an individual believes he or she should use a particular system." Several studies have found that attitudes towards use are influenced by factors such as perceived usefulness (Kanchanatanee et al., 2014; Romero et al., 2011; Dixit and Prakash, 2018), perceived ease of use (Kanchanatanee et al., 2014; Labib and Mostafa, 2015; Lin et al., 2011), trust (Romero et al., 2011), and perceived risks (Martín and Camarero, 2009).

Attitude towards a site is of great importance in predicting user behavior (Dixit and Prakash, 2018), and numerous studies have confirmed that attitudes towards sites affect the actual use of these sites, whether directly or indirectly through intention (Romero et al., 2011; Labib and Mostafa, 2015; Kanchanatanee et al., 2014; Alahverdi and Esfahani, 2021).

This leads to the fifth hypothesis (H5):

H5: Attitudes towards illegal immigration and smuggling groups on Facebook have a positive and significant effect on the actual usage of these groups.

Research Methodology

Methods and Data Collection

- *E-Questionnaire:*

The e-survey was conducted with a purposive sample of 415 Arab citizens, including illegal immigrants and those interested in illegal immigration, who were in contact with smugglers or their counterparts through Facebook groups.

The researcher joined Facebook groups focused on illegal immigration and smuggling and communicated via Facebook Messenger with respondents who met the following research conditions:

1. They must be Arab.
2. They must have the desire to migrate.
3. They must be members of at least one illegal immigration and smuggling group.
4. They must communicate with other potential immigrants or smugglers regarding immigration and smuggling journeys.

The researcher then sent the electronic questionnaire link via Google Docs. The respondents were a vulnerable population, especially those from war-stricken areas like Syria, hoping to leave their countries. Many initially thought the researcher was affiliated with organizations that could help them emigrate, but it was clarified that this was purely scientific research with no direct assistance in emigration.

Some people refused to respond, but others were highly cooperative. Due to their large numbers, the researcher contacted others until the sample reached 415 participants. Respondents communicated with the researcher upon completing the questionnaire, which allowed the researcher to review the responses on Google Docs to ensure their arrival and validity. Responses with duplicate IP addresses, short time intervals, or similar answers were removed as they likely came from the same person. Some respondents found difficulties with the electronic questionnaire, prompting the researcher to carefully explain the answering method, waiting, and following up until completion.

The questionnaire process was intensive, lasting daily for ten consecutive months, from June 17, 2019, to April 17, 2020.

- *Observation*

The e-questionnaire served as the main study tool for testing the proposed model, but the researcher also relied on observation by following and joining illegal immigration groups to understand the communication dynamics between illegal immigrants and their smugglers on Facebook and what these groups offer to attract more members.

The researcher focused on two distinct groups for the proposed model:

1. A group created by five Arab youth, "potential immigrants."

2. A group created by an immigrant smuggler.

The researcher did not include links to these groups to avoid identification and potentially place individuals at considerable personal risk.

Statistical Data Processing

The research model was tested using descriptive statistics and Structural Equation Modeling (SEM). Descriptive statistics summarized the sample characteristics, while the structural model evaluated the proposed hypotheses. *SPSS 25* and Smart *PLS 3* were used to test the hypotheses and analyze the data.

The following statistical methods were employed:

1) **Frequencies and percentages.**

2) The **measurement model** was assessed through:

   a) **Convergent validity**, which reflects the degree of consistency among the items used to measure the same concept. This includes **Cronbach's Alpha values**, **Average Variance Extracted (AVE)**, and **Composite Reliability** values. Additionally, the **outer loadings (factor** loadings**) of the variables** are examined as a measure of indicator reliability. The outer loadings of all indicators must be statistically significant.

b) **Discriminant validity**, which indicates the degree to which variables are distinct from one another, ensuring that each variable represents itself and not others. This is confirmed by:

- The **Cross-Loading test**, which measures whether the questions only measure the intended variable.

- The **Fornell-Larcker Criterion**, where the correlations between the indicators and their latent variable should be higher compared to their correlation with other variables.

- The **HTMT Ratio**, which estimates the true correlation between two constructs.

3) **The structural model was evaluated** by reporting:
p-values, R^2, beta (β) coefficients, t-values, predictive relevance (Q^2), and effect sizes (f^2).

4) **Mediation analysis** was also conducted, considering Attitude as a mediating variable between Perceived Ease of Use, Perceived Risks, Perceived Usefulness, Trust, and Actual Usage.

Sample Characteristics

An electronic survey was conducted with a sample of Arab citizens from twelve Arab countries. Their characteristics are detailed below:
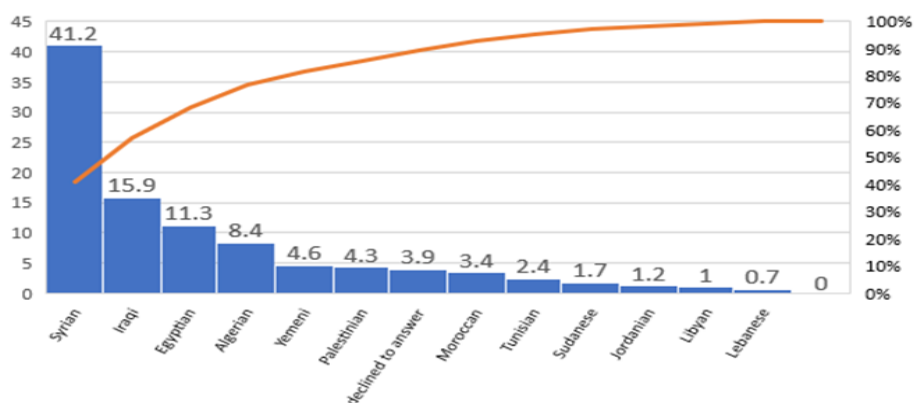
Study Sample Characteristics**:**

Figure 4: Study Sample Nationalities (%).

Respondents from twelve Arab countries participated in the study. Syrians ranked first in the study sample, representing 41.2% of the total due to the significant presence of Syrians in illegal immigration groups. This is largely a result of the events they have experienced since 2011, which have driven many to seek ways out of their country.

The respondents' countries of origin were distributed among all the countries of the Arab Mashreq (Syria, Egypt, Iraq, Palestine, Jordan, and Lebanon), all the countries of the Maghreb (Algeria, Tunisia, Morocco, and Libya), and the least developed Arab countries represented in this study were (Yemen and Sudan).

There were no respondents from other less developed countries (Djibouti, Comoros, Somalia, or Mauritania). Additionally, no participants were citizens of the Gulf Cooperation Council countries (Saudi Arabia, the UAE, Kuwait, Qatar, Oman, or Bahrain).
The researcher also observed a lack of participation from GCC citizens in illegal immigration and smuggling groups due to the high economic level of these countries compared to other Arab nations. This economic stability reduces their desire to migrate, especially through illegal means.

Table 1: Study Sample Demographic Variables

Religion	n	%	Age	n	%
Muslim	389	93.7	Under 18 years old	10	**2.4**
Christian	13	3.1	18 to under 28	231	**55.7**
Atheist	10	2.4	28 to under 38	121	**29.2**
Druze	2	0.5	38 to under 48	38	**9.2**
Yazidi	1	0.2	48 years and over	15	**3.6**
Educational Level	**n**	**%**	**Marital Status**	**n**	**%**
Below intermediate education	44	10.6	Single	227	**54.7**
Intermediate education	222	53.5	Married with children	141	**34**
University education	122	29.4	Married without children	28	**6.7**
Postgraduate (Master's/PhD)	27	6.5	Divorced	18	**4.3**
			Widower	1	**0.2**
Income	**n**	**%**	**Gender**	**n**	**%**
Insufficient	309	74.5	Male	393	**94.7**
Fairly sufficient	67	16.1	Female	22	**5.3**
Adequate	39	9.4	**Work**	**n**	**%**
			Unemployed	237	**57.1**
			Has work	178	**42.9**
		N=415			

The majority of illegal immigrants were males; this is due to the nature of Arab societies concerning women's immigration. Women do not typically immigrate alone but are often accompanied by their husbands or family members. The decision and agreement on the mode of travel are frequently made by a husband, father, or family breadwinner. Additionally, illegal immigration poses many risks that limit women's participation, except for war victims.

In Arab society, males are more likely to seek employment and improve their economic status, either to start a family or support an existing one. These factors limit the presence of females in illegal immigration groups and their pursuit of it, thus resulting in decreased female participation in the survey.

Young people are predominantly present in illegal and smuggling groups and are most interested in immigration. This is a logical outcome as young people are in dire need of employment opportunities and economic improvement. They are also the most enthusiastic and hopeful for a better future, which they believe awaits them in destination countries. Furthermore, they are more willing to take risks and endure the hardships of travel.

Intermediate education was the most prevalent among the study sample, and Muslims constituted the majority of the respondents, with insufficient or no income as they described themselves. The "single" category was the most represented among the study sample.

Results:

1) **Measurement Model Analysis**

   a) **Convergent Validity**

To assess convergent validity, variable factor loadings, Cronbach's alpha values, average variance extracted (AVE) values, and composite reliability values were examined.

Cronbach's alpha for all constructs should exceed 0.70, as recommended by Nunnally and Bernstein (1994). According to Chin (1998), AVE should be more than 0.50, and Hair et al. (2017) also noted that the required minimum level of AVE should be 0.50. The

minimum threshold for composite reliability is 0.70, and the outer loadings should be 0.708 or higher.

The convergent validity results, illustrated in Table 2, show that the factor loadings were all above 0.708. Cronbach's alpha for all constructs exceeded 0.70, the composite reliability for all constructs exceeded 0.70, and the AVE for all constructs exceeded 0.50.

Table 2. **Result of Convergent Validity**

Variable	Indicator	Factor Loadings	Cronbach's Alpha	rhoA	CR	AVE
Actual Usage	AU	1.000	1.000	1.000	1.000	1.000
Attitude	A_1	0.934	0.805	0.835	0.910	0.835
	A_2	0.893				
Perceived Ease of Use	PEOU	1.000	1.000	1.000	1.000	1.000
Perceived Risks	PR_1	0.973	0.828	0.841	0.899	0.750
	PR_2	0.820				
	PR_3	0.794				
Perceived usefulness	PU_1	0.721	0.861	0.893	0.902	0.652
	PU_2	0.806				
	PU_3	0.778				
	PU_4	0.717				
	PU_5	0.987				
Trust	T	1.000	1.000	1.000	1.000	1.000

b) Discriminant Validity
▪ Fornell-Larcker Criterion

According to Hair et al. (2017), a construct should share more variance with its associated indicators than with any other constructs. As shown in Table 3, for all indicators, the correlations between the indicators and their latent variables were higher than those of the other constructs.

Table 3. **Result of Fornell-Larcker Criterion**

	Actual Usage	Attitude	Perceived Ease of Use	Perceived Risks	Perceived usefulness	Trust
Actual Usage	**1.000**					
Attitude	0.401	**0.914**				
Perceived Ease of Use	0.428	0.553	**1.000**			
Perceived Risks	0.316	-0.157	0.380	**0.866**		
Perceived usefulness	0.479	0.674	0.498	0.378	**0.808**	
Trust	0.205	0.665	0.359	0.123	0.406	**1.000**

- **Cross Loadings**

Chin (1998) suggested that each block of indicators should load higher on its respective latent variable (LV) than on other LVs. Table 4 shows that the correlations between the indicators and their latent variables were higher than those of the other constructs.

Table 4. Results of Cross Loadings

	Actual Usage	Attitude	Perceived Ease of Use	Perceived Risks	Perceived Usefulness	Trust
AU	1.000	0.401	0.428	0.316	0.479	0.205
A_1	0.534	0.934	0.588	0.125	0.668	0.636
A_2	0.157	0.893	0.402	-0.482	0.301	0.574
PEOU	0.428	0.553	1.000	0.380	0.498	0.359
PR_1	0.297	-0.226	0.339	0.973	0.325	0.093
PR_2	0.258	-0.177	0.243	0.820	0.301	0.030
PR_3	0.263	0.015	0.411	0.794	0.360	0.205
PU_1	0.231	0.458	0.282	0.250	0.721	0.289
PU_2	0.391	0.524	0.393	0.284	0.806	0.288
PU_3	0.285	0.547	0.392	0.277	0.778	0.361
PU_4	0.545	0.457	0.404	0.312	0.717	0.220
PU_5	0.472	0.697	0.510	0.387	0.987	0.444
T	0.205	0.665	0.359	0.123	0.406	1.000

- **HTMT Ratio**

According to Hair et al. (2017), the HTMT Ratio is an estimate of the true correlation between two constructs, suggesting that the HTMT value should be lower than 0.90.

As shown in Table 5, all correlations between the constructs of all items were lower than those of the HTMT. 90, specifically in the range of 0.139–0.762, indicating discriminant validity.
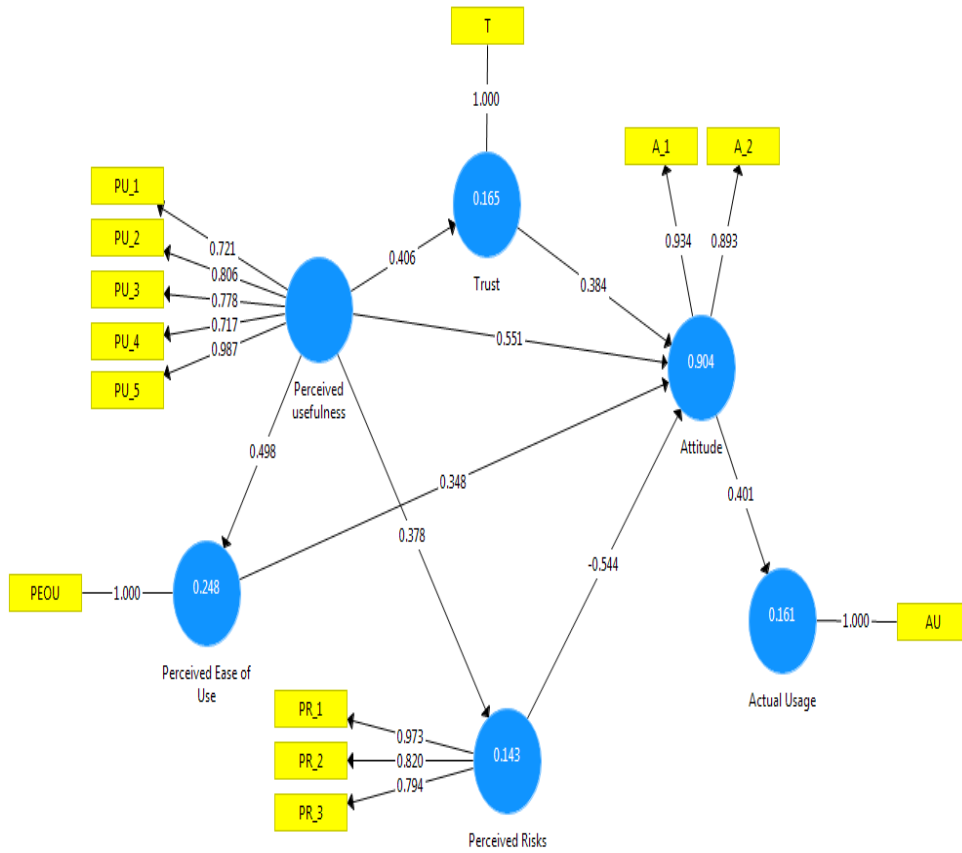
Figure 5. Measurement Model Results

Table 5. Results of HTMT Ratio

	Actual Usage	Attitude	Perceived Ease of Use	Perceived Risks	Perceived Usefulness	Trust
Actual Usage						
Attitude	0.421					
Perceived Ease of Use	0.428	0.604				
Perceived Risks	0.348	0.406	0.422			
Perceived Usefulness	0.517	0.762	0.532	0.450		
Trust	0.205	0.738	0.359	0.139	0.431	

2) structural model Analysis

a) Results of Hypothesis Testing

According to Hair et al. (2017), when assessing the structural model, researchers should report not only the p-values but also R2, beta (β) coefficients, t-values, predictive relevance (Q^2), and effect sizes (f^2). These elements are detailed below.

Table 6: Results of Hypothesis Testing

Hypothesis	Relationship	Std. Beta	Std. Error	T-Values	P Values	Decision
H1	Trust -> Attitude	0.384	0.024	15.767	0.000	Supported
H2$_a$	Perceived Usefulness -> Perceived Ease of Use	0.498	0.044	11.310	0.000	Supported
H2$_b$	Perceived Usefulness -> Trust	0.406	0.045	8.989	0.000	Supported
H2$_c$	Perceived Usefulness -> Perceived Risks	0.378	0.054	6.984	0.000	Supported
H2$_d$	Perceived Usefulness -> Attitude	0.551	0.030	18.338	0.000	Supported
H3	Perceived Risks -> Attitude	-0.544	0.025	22.070	0.000	Supported
H4	Perceived Ease of Use -> Attitude	0.348	0.027	13.093	0.000	Supported
H5	Attitude -> Actual Usage	0.401	0.042	9.527	0.000	Supported

In this study, the *PLS* bootstrapping procedure with a resample of 5000 was used. The results of the bootstrapping illustrated that attitude was influenced by trust (β=0.384, t=15.767, p<0.001), which proves that H1 is supported.

Meanwhile, perceived ease of use is directly influenced by perceived usefulness (β=0.498, t=11.310, p<0.001). Trust is also directly influenced by perceived usefulness (β=0.406, t=8.989, p<0.001), perceived risks are directly influenced by perceived usefulness (β=0.378, t=6.984, p<0.001), and attitude is directly influenced by perceived usefulness (β=0.551, t=18.338, p<0.001). which suggests that H2$_a$, H2$_b$, H2$_c$, and H2$_d$ are supported.

Attitude is negatively influenced by perceived risks (β=-0.544, t=22.070, p<0.001) and positively by perceived ease of use (β=0.348, t=13.093, p<0.001), which proves that H3 and H4 are supported.

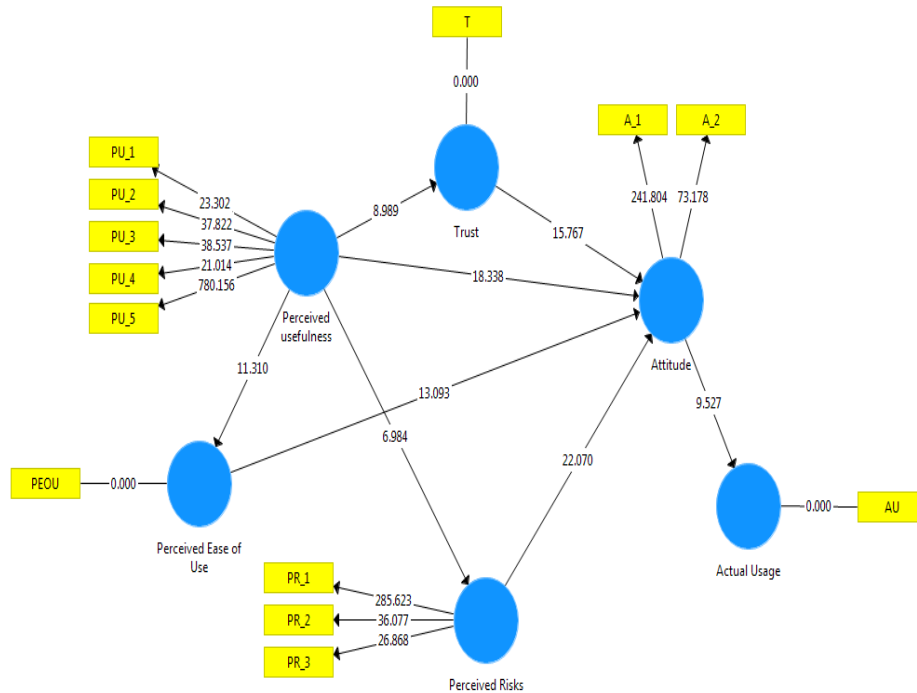Finally, actual usage is directly influenced by attitude (β= 0.0.401, t=9.527, p<0.001), supporting H5.

Figure 6. Bootstrapping Results

b) Effect Sizes (f²)

Cohen (1988) defined effect size as "the degree to which the phenomenon is present in the population." According to Cohen (1988), an f2 value above 0.35 is considered a large effect size, values ranging from 0.15 to 0.35 are medium, and values between 0.02 to 0.15 are small. Values less than 0.02 are considered to have no effect size.

Table 7 displays the effect size (f²) values obtained in this study. The results demonstrated that the current research validated a strong and significant effect of trust, perceived usefulness, perceived risks, and perceived ease of use on attitude. Meanwhile, the effect of perceived usefulness on perceived ease of use, trust, and perceived risks was moderate. Additionally, attitude had a moderate effect on actual usage.

Table 7. **Results of Effect Sizes (f^2)**

Relationship	f Square
Trust -> Attitude	1.218
Perceived Usefulness -> Perceived Ease of Use	0.329
Perceived Usefulness -> Trust	0.197
Perceived Usefulness -> Perceived Risks	0.167
Perceived Usefulness -> Attitude	2.049
Perceived Risks -> Attitude	2.465
Perceived Ease of Use -> Attitude	0.850
Attitude -> Actual Usage	0.192

c) Coefficient of Determination (*R2*)

Hair et al. (2017) suggested that the acceptable level of R2 values depends on the model's complexity and the research discipline. Falk and Miller (1992) suggested that the minimum coefficient of determination (R2) should be 0.10. Chin (1998) indicated that values of (R2) above 0.67 are considered substantial, values ranging from 0.33 to 0.67 are average, and values between 0.19 to 0.33 are weak.

Table 8 shows the coefficients of determination (R2) for this study. The results demonstrated that attitude (A) explained 16.1% of the variance in actual usage (AU). Perceived ease of use (PEOU), perceived usefulness (PU), perceived risks (PR), and trust (T) explained 90.4% of the variance in attitude (A). Meanwhile, perceived usefulness (PU) explained 24.8% of the variance in perceived ease of use (PEOU), 14.3% of the variance in perceived risks (PR), and 16.5% of the variance in trust (T).

Table 8. **Level of Coefficient of Determination (*R2*)**

	R Square	R Square Adjusted
Actual Usage	0.161	0.159
Attitude	0.904	0.903
Perceived Ease of Use	0.248	0.246
Perceived Risks	0.143	0.141
Trust	0.165	0.163

d) Blindfolding and Predictive Relevance (*Q²*)

According to Chin (1998), $Q^2 > 0$ implies the model has predictive relevance, while $Q^2 < 0$ represents a lack of predictive relevance.

Table 9 shows the blindfolding and predictive relevance (Q²) values for the current study. These results imply that all exogenous constructs possess predictive relevance for all endogenous constructs. Attitude (A) had a predictive relevance of 0.155 for actual usage (AU). Perceived ease of use (PEOU), perceived usefulness (PU), perceived risks (PR), and trust (T) had a predictive relevance of 0.741 for attitude (A). Meanwhile, perceived usefulness (PU) possessed a predictive relevance of 0.242 for perceived ease of use (PEOU), 0.104 for perceived risks (PR), and 0.160 for trust (T).

Table 9. **Results of Blindfolding and Predictive Relevance (*Q²*)**

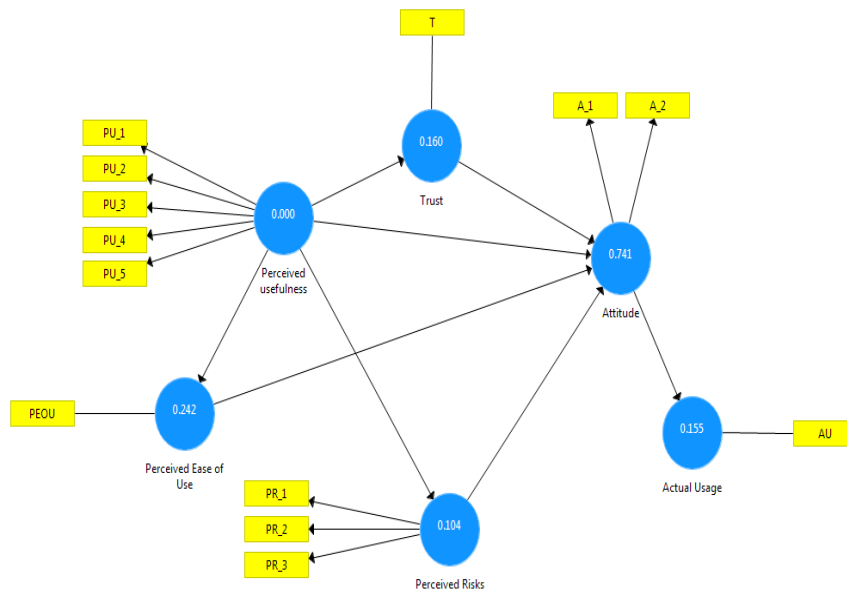|	Q² (=1-SSE/SSO)
Actual Usage	0.155
Attitude	0.741
Perceived Ease of Use	0.242
Perceived Risks	0.104
Trust	0.160

Figure 7. Blindfolding Results

3) **Mediation Analysis**

"Mediation occurs when a third variable, referred to as a mediator variable..." (Hair et al., 2017). Preacher and Hayes (2008) suggested

that the 95% confidence intervals should not include zero to indicate the presence of mediation. The *PLS* bootstrapping procedure with a resample of 5000 was utilized, as this procedure can provide indirect effects to assess mediation. Table 10 displays the results of mediation. The results implied a significant indirect effect between perceived ease of use and actual usage through attitude ($\beta = 0.139$) with a t-value of (7.472). This indirect effect of 0.139 at the 97.5% bootstrap confidence interval [LL = 0.105, UL = 0.178], which does not straddle 0, seems to indicate the presence of mediation.

There was also a significant indirect effect between perceived risks and actual usage through attitude ($\beta = -0.218$) with a t-value of (8.430). This indirect effect of -0.218 at a 97.5% bootstrap confidence interval [LL = -0.270, UL = -0.169], which does not straddle 0, seems to indicate the presence of mediation.

A significant indirect effect was also detected between perceived usefulness and actual usage through attitude ($\beta = 0.270$) with a t-value of (8.861). This indirect effect of 0.270 at a 97.5% bootstrap confidence interval [LL = 0.210, UL = 0.330], which does not straddle 0, seems to indicate the presence of mediation.

Finally, there was a significant indirect effect between trust and actual usage through attitude ($\beta = 0.154$) with a t-value of (7.965). This indirect effect of 0.154 at the 97.5% bootstrap confidence interval [LL = 0.117, UL = 0.193], which does not straddle 0, seems to indicate the presence of mediation.

Table 10. **Results of Mediation**

Relationship	Std. Beta	Std. Error	T-Values	P Values	Confidence Intervals		Decision
					2.5% LL	97.5% UL	
Perceived Ease of Use ->Attitude-> Actual Usage	0.139	0.019	7.472	0.000	0.105	0.178	Supported
Perceived Risks -> Attitude-> Actual Usage	-0.218	0.026	8.430	0.000	-0.270	-0.169	Supported
Perceived Usefulness -> Attitude-> Actual Usage	0.270	0.031	8.861	0.000	0.210	0.330	Supported
Trust -> Attitude-> Actual Usage	0.154	0.019	7.965	0.000	0.117	0.193	Supported

Discussion and Conclusion

The study's findings reveal several key insights into how social media, particularly Facebook, is utilized by illegal immigrants and smugglers. Facebook's illegal immigration and smuggling groups are filled with numerous posts regarding offers and requests for immigrant smuggling. These posts vary from sharing the experiences of actual or potential illegal immigrants to inquiries and exchanges of details between illegal immigrants and smugglers about smuggling offers, prices, and available options.
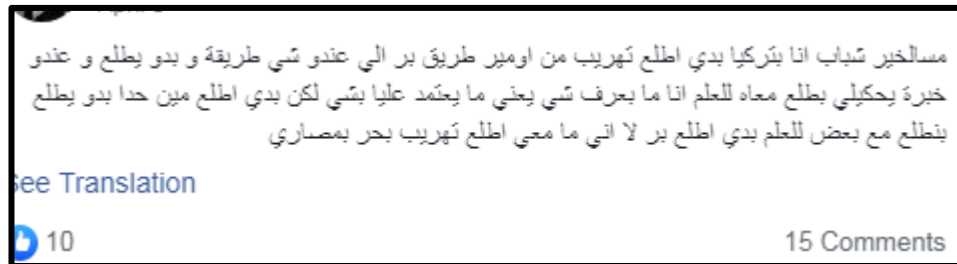
Figure 8

Samples of Smuggling Offers and Requests in an Illegal Immigration Group

The researcher cropped names and profile pictures.

The surge in the number of Arabs joining these groups has been experiencing a rapid escalation. Understanding the motivations of people to use Facebook's illegal immigration and smuggling groups and identifying the parameters that affect the adoption of these groups in their pursuit of illegal immigration are the objectives of this research.

The application of the proposed Social Network Sites Adoption (SNSA) Model has provided a comprehensive understanding of the factors influencing this usage. The results demonstrate that perceived usefulness, perceived ease of use, trust, and perceived risks are significant determinants in the adoption of social media for illegal immigration activities.

The proposed model indicates that trust, perceived ease of use, and perceived usefulness of illegal immigration and smuggling groups on Facebook have a positive and significant effect on attitudes toward these groups. Meanwhile, perceived risk has a negative and significant effect on attitude. Perceived usefulness also has a positive and significant effect on perceived ease of use, trust, and perceived risk.

The attitude toward illegal immigration and smuggling on Facebook had a positive and significant effect on the actual usage of these groups. This means that perceived usefulness, perceived ease of use, trust, and perceived risk are all determinants of illegal immigrants' use of Facebook for illegal immigration through their direct effect on attitude, which in turn directly affects actual usage. Perceived

usefulness, perceived ease of use, and trust positively and directly affect attitudes toward these groups. However, perceived risk negatively influences attitudes. Another conclusion of the study was that the effects of trust, perceived usefulness, perceived risks, and perceived ease of use on attitude were strong, but the effect of perceived usefulness was medium on perceived ease of use, trust, and perceived risks. In addition, attitude had a medium effect on actual usage.

The findings provide empirical support for the mediating role of attitude in the proposed model, as all indirect effects are significant, and none of the 95% confidence intervals include zero. Attitude represents a mechanism that underlies the relationship between perceived ease of use and actual usage, perceived risks and actual usage, perceived usefulness and actual usage, and trust and actual usage.

The results also imply that all exogenous constructs possessed predictive relevance for all endogenous constructs. Although perceived ease of use, perceived usefulness, perceived risks, and trust explained 90.4% of the variance in attitude, attitude explained 16.1% of the variance in actual usage. This may be due to the presence of other external factors influencing the use of social media for illegal immigration, which provides abundant room for further progress by replicating the proposed conceptual framework to be tested, taking into account external factors.

Social pressure or social influence is an external factor. Fox and Moreland (2015) discussed the social pressure factor as an influencing factor in pushing people to use Facebook, as the presence of friends and family on a social platform pushes them to be present. Kokab et al. (2023) found a positive relationship between social influence and the intention of behavior to use social media, as the social influence of colleagues and friends positively affects the behavioral intention to use social media. Al-Qaysi et al. (2023) confirmed that social influence is one of the most studied factors as an external factor affecting the adoption of social media content. The SNSA model also identified normative pressure, which refers to the extent to which members of society, such as friends and family, influence an

individual's behavior, causing the individual to experience social pressure to perform a certain behavior, as well as the influence of the perceived expectations of specific individuals or reference groups (Sledgianowski and Kulviwat, 2008). This was confirmed by the respondents in the current study, where 47.2% of the study sample confirmed that their families and friends encouraged them to migrate illegally—not included in the main manuscript—indicating that the inclusion of this factor may be useful in improving the model and understanding the dimensions and determinants of using social media in illegal immigration.

One of the other factors that can affect the use of social media, especially in criminal activities such as illegal immigration, is demographic factors, as the tendency to take risks associated with illegal immigration is more closely related to youth, and gender may affect the perception of respondents' ease of use. Kokab et al. (2023) found that gender had a mediating effect on effort expectancy towards behavioral intention to use social media. As noted in the current study, the majority of respondents were male (94.7%), most of whom (84.9%) were between 18 and 38 years old, (54.7%) were single, and (57.1%) did not work. All of these demographic factors are likely to influence the results, which should be considered in future studies.

To summarize, the study focused on the specific factors that determine the use of social media, a prevalent modern medium for illicit activities, particularly illegal migration. The applied model can be utilized to comprehend the reasons and factors behind adopting social media content. Perceived ease of use, usefulness, risks, and trust explained 90.4% of the variance in attitudes, making them valuable factors to consider in different areas that rely on social media to promote certain content.

The researcher believes that ease of use and perceived usefulness are the most important factors that can control Facebook use in general, in addition to perceived playfulness.

Concerning the use of social media in illegal activities, it may be controlled, in addition to perceived usefulness and ease of use, by trust in the site, the extent of perception of perceived risks, social pressure, and demographic factors such as age and gender.

Given the arduousness of controlling some factors, such as ease of use, which are intertwined with the medium itself, or demographic characteristics, governments, as well as traditional and modern media, can initiate awareness campaigns that target the vulnerabilities within these factors. These vulnerabilities encompass the perceived risks and trust in the medium, both of which have been substantiated to influence the adoption of social media for illegal migration. By directing attention towards the perils confronted by illegal immigrants and endeavoring to undermine their trust in these groups, and focusing on the subsequent consequences of following them, including falling prey to fraud, theft, and other hazards, these campaigns can effectively curtail illegal migration.

Conclusion:

This research highlights the dual-edged nature of social media as a tool for illegal immigration and smuggling. While these platforms provide significant advantages in terms of communication and coordination, they also pose substantial risks. The modified Social Network Sites Adoption *(SNSA)* Model effectively captures the complex interplay of factors influencing the use of social media for illegal activities. The findings underscore the need for policymakers and law enforcement agencies to develop targeted strategies to combat the misuse of social media. This includes enhancing surveillance capabilities, fostering collaborations with social media companies, and increasing public awareness about the risks and legal repercussions of using these platforms for illegal purposes.

Notes:

1. The short link to the electronic survey applied by the researcher can be found here, https://forms.gle/2yQFRGR8DZ5hsfyDA

2. The Arab countries were divided into: (the Arab Maghreb, the Arab Mashreq, the Gulf Cooperation Council, and the least-developed Arab countries), followed by the researcher in this article, who benefited from the reports of the United Nations and the International Organization for Migration (IOM) concerning the Arab region.

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