

**CONSUMER PERCEPTIONS TOWARDS DIGITAL SHADOW ECONOMY –
EMPIRICAL EVIDENCE FROM NORTH MACEDONIA**

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Abstract: The informal economy is a global phenomenon and a threat to the entire world economy. Fueled by the rapid growth of the digital economy and the increasing use of e-commerce worldwide, the informal economy is gaining momentum in the digital space as well. As volume, variety and velocity of transactions in the digital space increase rapidly, the number of illegal digital operators and platforms is increasing as well, encouraging consumers' participation in digital shadow trade for different reasons. Undoubtedly, one of the most significant challenges in recent years is the difficulty to define and hence detect economic shadow activities, objects and entities in the digital environment, which is the basis for the growth of the shadow economy. Although lately the interest towards the forms, channels, characteristics and scope of digital shadow activities is increasing, there isn't a clear understanding of digital shadow economy in the scientific literature. The plethora of terms, definitions, factors and characteristics relevant to this phenomenon is quite broad, indicating a necessity for collaborative efforts aimed at achieving common understanding of the digital shadow economy. This is essential for the identification, measurement, and reduction of shadow activities within the digital space.

Even though the unofficial/shadow digital trade of goods and services is common in both developing and developed countries, little is known about consumer perceptions and behavior in this growing market driven by rapid technological advances. Therefore, it is pivotal to comprehend how consumers perceive the phenomenon of digital shadow economy, are they aware of informal economy in the digital environment and how they behave online.

This study aims to examine significant aspects of the digital shadow economy and to evaluate consumer perceptions and attitudes regarding this phenomenon in the country. It employs a quantitative analysis, and a questionnaire as the instrument for data collection was distributed among more than 170 respondents. The findings provide relevant theoretical and practical implications and confirm moderate level of awareness of Gen Z towards digital shadow economy in our sample. The results also reveal some valuable insights about online consumer perceptions towards determinants of digital shadow consumption and what affects consumer attitude in online shopping channels.

Regardless of the efforts to reduce the informal economy in the country, there is a lack of studies and empirical evidence on digital shadow economy from consumer perspective. This study contributes to the understanding of how Gen Z perceive the phenomenon of digital shadow economy and hence can promote activities in rising awareness about the negative effects of shadow activities in the digital space, encouraging young online consumers on strong attitude in avoiding shadow channels in the digital space.

Keywords: Digital Shadow Economy, North Macedonia, Gen Z

1. INTRODUCTION

The informal economy is ubiquitous, present in all societies, in different forms, different sectors and in different extents. It is more common in developing countries, but it is also present in developed countries as well. In low- and middle-income countries it represents on average about 35 percent of GDP, while in high-income countries about 15 percent of GDP (Kelmanson et al., 2019). Although Europe is among the regions with the lowest level of informality, the Republic of North Macedonia is counted among the countries with a significant degree of informal

economy (in Europe). Despite the great efforts to reduce the informal economy in the country, studies and estimations on the participation of the shadow economy in the total GDP in the Republic of North Macedonia show a high informal economy in the country (between 20-40%), and according to the latest estimates, it was between 31% and 37.6% of GDP in 2016 (Kelmanson et al., 2019; Elgin et al., 2021) and between 29.4 % and 33.6% in 2018 (Elgin et al., 2021). The shadow economy is a phenomenon of global scale and a threat to the entire world economy. Nevertheless, in the last years one the most significant challenges is the difficulty to define economic activities, objects and entities in the e-space, which is the basis for the growth of the shadow economy. Through e-platforms such as (social networks, e-commerce, e-business systems etc., circulate real money, goods and services but majority of these transactions remain recorded and do not generate taxes. Despite the prevalence of the informal exchange of goods and services in the digital space in both developing and developed countries, so far little is known about consumer attitude in this large and rapidly expanding market fueled by rapid technological advances. Empowered by the rapid development of the digital economy and the increasing use of online shopping, the informal economy is gaining momentum in the digital space as well. Given the significant volume of informal economic activities in the Macedonian economy and its negative implications, this paper aims to analyze the consumer perceptions toward DSE and its determinants as well as consumer attitude in e-commerce.

Nowadays, e-commerce is global and widespread. It is an opportunity for entities to achieve growth and target new consumers, for consumers/buyers a greater choice of products/services, better price, more information, convenience, fun etc. But, one of the barriers to the growth of e-commerce is the informal economy, which creates unfair competition. Unregulated online sales and e-commerce are fueling the shadow economy. The informal activities in e-commerce have significant impact on individual entities, businesses and society as a whole (Gasparėnienė and Remeikienė, 2016). The reduction of the shadow economy in e-trade will also mean better e-commerce, and a significant factor for reducing the informal economy is digitalization (Muminov et.al., 2020). However, without being aware about the forms, channels and participants of the shadow economy in e-commerce, it is challenging to estimate its size or costs.

Available research in the domain of the informal economy in e-commerce is mostly focused on the supply side with less focus on demand side, from consumers' perspective, although many activities in the informal sector are initiated by consumers (Williams, 2014, Gaspareniene et.al. 2017). The need for a comprehensive and systematized insight into the phenomenon of the shadow economy and e-commerce is imperative. This means that in addition to detecting/defining its forms, with the aim of suppressing them, it is also necessary to direct the research focus to determine factors that influence/motivate consumers to participate in the informal economy. In order to enhance the understanding of shadow markets in the digital space, it is significant to gain insights into the consumer behavior in e-commerce, as well as their attitudes and perceptions of the informal economy in the digital space. This approach will contribute in filling this gap in the available research in the domain of DSE.

Increasing options, volumes and convenience of e-commerce motivate customers to acquire goods and services in the digital platforms. Concurrently, the growth of e-commerce creates new opportunities for the shadow economy by providing favorable conditions for and retailers and service providers to operate in the digital space while evading taxation (Gaspareniene et.al. 2015). Consumer participation in the DSE can have negative consequences for various economic subjects due to competition from illegal e-traders. Furthermore, digital shadow consumption can lower public morale and society's self-consciousness (Gaspareniene et.al. 2015).

In the direction of removing barriers that limit the development (including the shadow economy) and creating a favorable climate for e-commerce development and growth in the country, this research aims to analyze perceptions of young consumers towards DSE and determinants of their attitude in online shopping. Knowing how they perceive DSE, are they aware they are part of DSE or not, and what determines (or does not determine) their behavior in online shopping, can provide solid base to discourage consumers to consciously participate in DSE and act on improving user experience, promote trust and reliability of online shopping platforms, security of online payments, etc. Considering these insights, it is possible to act through the motivation and stimulation of online shoppers to buy from registered e-retailers, as well as on their intention/intention to repeat purchases from registered e-retailers, which would indirectly affect the reduction of the digital shadow economy.

Based on this, the goal of this paper is to analyze the Gen Z perceptions towards DSE and to explain the consumer attitude in e-commerce.

2. LITERATURE REVIEW

Despite its increasing importance, the available literature doesn't propose any universal definition of digital shadow economy (further in text DSE). Most of the studies on DSE describing illegal digital activities (for ex. cybercrime, e-fraud, and digital piracy) are covering ambiguous interpretations of DSE that incorporated both economic and criminal aspects of the activities performed in the digital space. In consequence, a plethora of terms, definitions,

explanations and characteristics relevant to this phenomenon are extensive, lacking clear understanding of its form, channels, features and scope. Generally, in the academic literature, different terms of DSE are used that describe the term from three different perspectives: the nature of digital shadow activities, the role of consumer and the supplier as active subjects (Gasparenienė et al. 2016). Based on the first criteria there is a distinction between *digital underground economy* as hidden (unregistered) profit-driven online business (Yip et al. 2012, Gasparenienė et al. 2017), *illegal digital economy* referring to “violation of the established legal regulations on digital business rather than a profit aspect” (Baldwin-Edwards 2014, Gasparenienė et al. 2017); *digital unrecorded economy* emphasizing “circumvention of the defined regulations and requirements on reporting business or trade activities performed in the Internet” (Feige, Urban 2008, Gasparenienė et al. 2017,) and *unreported digital economy* which reveals “evasion of tax contributions in digital business” (Feige 2007, 2012; Gaertner, Wenig 2012, Gasparenienė et al. 2017). Based on this, Gasparenienė et al. 2017, describe DSE in its general sense referring to as “illegal, unreported or unrecorded activities online, driven by profit, tax evasion, gain or circumvention of legal regulations” (Gasparenienė et al. 2017).

The closest understanding of the term in context of this research describes DSE as part of the informal economy referring to „unregistered or illegal profit-driven activities in the digital space, basically related to trade or service provision through digital channels and platforms“ (Remeikienė et al., (2018). DSE involves the same primary agents as traditional shadow economy (a vendor/service provider and a customer), although the location include large number of digital platform accessible through different digital devices.

Even though the variety of definitions available in the literature emphasize some of the important aspects of DSE, most of them lack the profound understanding when describing the phenomenon of DSE (Ohrimenco and Borta, 2021). Therefore, Ohrimenco and Borta (2021), identify five main approaches in defining the phenomenon of DSE: “legal, mathematical, socio-psychological, organizational and managerial, economic, and financial” (Ohrimenco and Borta, 2021). This implies that DSE is very complex phenomenon requiring interdisciplinary and holistic approach. In the context of e-commerce, distinctive features of digital trade determine conscious or unconscious customers’ participation in DSE. According to Gasparenienė et al. (2017), consumers can be considered as one of the main parties of the DSE, creating the digital shadow consumption since they create the demand for goods and services traded online and create large amount of digital consumption.

Therefore, it is important to understand how individual buyers, perceive the concept of informal economy in the digital space since they purchase goods/services online and what determinants create demand for goods and services in informal markets in the cyber space. Some of the drivers of digital shadow consumption described in the literature are: *economic (market) drivers* (like price, consumer value and benefits, cost reduction), *source drivers* (product availability, reach offer and variety, convenience), *social drivers*, *risk drivers* (low fear of punishment, anonymity), *moral drivers* (hardly perceived magnitude of consequences), *technological drivers* (like presence of opportunities and diverse channels), *institutional drivers* (lack of appropriate control and punitive measures) etc. (Amasiatu and Shah, 2014; Williams et al., 2010; Yu et al., 2015; Arli et al., 2015; Vida et al., 2012; Gasparenienė et al., 2015 etc.). Based on this, Gasparenienė et al., 2015 describe that “digital shadow consumption is typically driven by higher customer satisfaction, generated by acquisition of a desired product or service at lower costs, wide variety of e-stock, quicker and convenient delivery, social acceptability of illegal activities online, minimal investment at risk and low fear of punishment, the apparent lack of action victims and easy access to IT and the Internet in consumers’ environment”.

3. RESEARCH DESIGN AND RESULTS

To achieve the objective outlined in this paper, an empirical study was carried out during the timeframe from late February to early May 2024. For data collection a questionnaire was developed as a form of e-survey (and administrated via Google Form). The statements included in the questionnaire referring to the consumer perceptions, determinants of digital shadow consumption and consumer attitudes have been derived from the works of Gasparenienė et al. (2015), Yip et al. (2012), and Gasparenienė et al. (2017). The target group in this research are youth, mostly generation Z consumers as significantly representative sample of current online population in North Macedonia. Gen Z, defined as individuals born from the late 1990s to the early 2010s, represents a significant segment of the population that is particularly adept at using technology and engaging with digital platforms (Seemiller & Grace, 2016) exposed to digital technologies from earliest youth. They can be described as a generation very eager and comfortable with different digital technologies and with “almost natural” online experiences (Mijoska et al. 2023). Gen Z, having grown up with digital technology, exhibits distinctive behaviors and preferences in their interaction with digital platforms. According to Seemiller and Grace (2016), Gen Z values transparency, speed, and convenience in their digital interactions. Research by Smith (2017) indicates that this generation is more likely to engage with digital platforms that offer immediate rewards and feedback, characteristics

and hence can be easy target of shadow players. Understanding how these demographics perceive DSE and how they behave while shopping online is crucial for developing effective strategies for reducing shadow economy in e-commerce.

The total number of received responses at the time of analysis is 179, but 156 questionnaires were included for further analysis as complete. Demographic characteristics of the sample shows 71.2% female and 28.8% male respondents. Most of them, 94.9% use mobile device/smartphone as usual internet access point. 30% of the respondents shop online several times a week and 53.2% of them usually spent on average up to 1000 denars per order. Mostly they buy clothes and footwear (71.8%), followed by food, digital content (music, movies, e-books and other digital content, subscriptions. Technology and electronics and software are the least preferred items bought online. The usual payment method when buying online for more than a half of the respondents is cash-on-delivery, while 41.3% prefer online payment.

Based on the discussion and literature review, several simplified descriptions of the concept of DSE were proposed to the respondents to estimate their perception and understanding of the phenomenon. The results are presented in Table 1. The data, shows how different proposed explanations of the concept DSE are scored by respondents. Based on the results, the highest mean value (4.19) was estimated for the explanation “DSE is unregistered economic activities online, performed evading tax contributions”. Such perception for the phenomenon of digital shadow economy shows that respondent is aware that DSE has its negative effects on the state budget.

Table 1. Consumers’ perceptions towards DSE

| Understanding the digital shadow economy | Mean |
|--|-------------|
| <i>Proposed Statements</i> | |
| Unregistered economic activities online, performed evading tax contributions | 4.19 |
| Income generated by economic activities online, performed violating the defined legal regulations on commerce | 2.77 |
| Profit-driven offences committed exploiting networked technologies | 3.17 |
| Online trading of illegal physical products or fraudulent data | 3.17 |
| Internet-based crimes conducted remotely to illegally take wealth or resources from private and juridical entities as well as the public sector | 2.34 |
| Consumer’s dishonest acting online, performed violating the contract terms with a view to earning profit from dishonesty | 2.44 |
| A type of product piracy, emerging as producing, acquiring and/or consuming illegal copies of any authentic product | 3.63 |
| An illegal operation in the Internet space, which generates illegal money flows for commodity/service providers or purchasers, and deprives legal traders/service providers from the revenue that could be officially accounted, calculated and declared | 3.77 |
| Other (explain) | 2.67 |

(Source: Authors calculations based on survey data)

Digital shadow economy described as an illegal operation in the Internet space, which generates illegal money flows for commodity/service providers or purchasers and deprives legal traders/service providers from the revenue that could be officially accounted, calculated and declared, undermining legitimate businesses by depriving them of potential revenue that could be properly recorded, assessed, and reported, was scored with second highest mean value of 3.77. The concept defining DSE as a type of product piracy, emerging as producing, acquiring and/or consuming illegal copies of any authentic product, was estimated mean value of 3.63. The findings of the survey indicate that DSE is less perceived as “Internet-based crimes conducted remotely to illegally take wealth or resources from private and juridical entities as well as the public sector” with lowest mean value of 2.34.

Table 2. Consumers’ perceptions towards most common reasons for shadow activities online (factors of digital shadow consumption)

| Determinants of digital shadow consumption | Mean |
|---|-------------|
| <i>Proposed statements</i> | |
| <i>Economic</i> | |
| Unfavorable economic situation in the country (high unemployment, low salary) | 4.13 |
| Lower prices, better options and conditions | 3.73 |
| <i>Social</i> | |

| | |
|---|------|
| Low tax morality level in the country | 3.66 |
| <i>Legal</i> | |
| Low possibility of detection of purchases from legally non-existent entity without paying tax | 3.17 |
| Weak legal framework which could help to control the scopes of cybercrime | 3.77 |
| <i>Psychological determinants</i> | |
| Prevailing stereotypical negative opinion about governmental institutions and public authorities | 2.75 |
| <i>Other</i> | |
| Lack of opportunities to obtain a desired product in the local markets | 2.44 |
| Usefulness and convenience, opportunity to make purchases round-the-clock without leaving home, anonymity | 3.01 |
| Time saving obtaining a product/service | 2.94 |

(Source: Authors calculations based on survey data)

Mean values of the determinants of digital informal consumption show that the group of economic factors i.e. unfavorable economic situation in the country (high unemployment, low salary) and lower prices, better options and conditions, are ranked as most important. Specifically in this group unfavorable economic situation in the country (high unemployment, low salary) is rated as more important determinant followed by lower prices, better options and conditions. Weak legal framework and low tax morality are rated as moderately important determinants with mean score of 3.77 and 3.66 respectively. As less important are factors rated in group other like convenience in online shopping expressed as time saving and lack of opportunities to obtain a desired product in the local markets, with 2.94 i.e. 2.44 mean value respectively. The respondents in our sample do not identify this set of determinants as motivating factors, therefore they do not influence digital shadow consumption in our sample.

Table 3. Customer attitude toward DSE

| Customer attitude | Mean |
|--|-------------|
| <i>Proposed Statements</i> | |
| I clearly understand the phenomenon of digital shadow economy | 2.96 |
| I can protect myself from involvement in digital shadow trade when buying online | 3.11 |
| I can easily avoid shadow activities in the digital space | 2.85 |
| I am completely aware of digital shadow activities that should be avoided | 3.29 |
| I never intentionally participate in illegal online activities | 3.83 |
| I always prefer buying from registered e-vendors | 3.92 |
| I always check the credibility of the online store before I buy | 4.08 |
| I always request purchase confirmation documents (receipts) when I buy | 3.92 |

(Source: Authors calculations based on survey data)

Based on the results presented in Table 3 referring to consumer attitude in online shopping, the respondents declare that they always check the credibility of the online store before making an online purchase and always request purchase confirmation documents (receipts) when buying online especially when paying on delivery. These statements have the highest mean values 4.08 and 3.94 respectively. Their preference is also registered e-vendors (3.92). According to Gasparėnienė et.al. 2015, consumers participating in DSE activities usually do not verify the status of e-retailers or request purchase confirmation documents. This lack of diligence significantly encourages illegal traders to continue their unregistered e-activities, thereby evading revenue taxation. (Gasparėnienė et.al., 2015). The lowest mean values in this category are scored to the statement “I can easily avoid shadow activities in the digital space” (2.85) and “I clearly understand the phenomenon of digital shadow economy” (2.96), meaning that consumers in our sample are not quite clear about the concept of DSE and are uncertain when operating in digital space what is shadow behavior. This implies the necessity of strategies that may raise the awareness of what shadow economy in digital space implies and how to behave safely avoiding digital shadow activities.

4. CONCLUSIONS

Given the significant volume of e-commerce in the Macedonian economy especially in recent years (after pandemics) and increasing trends, the goal of the paper is to discuss and analyze shadow economy in e-commerce from consumer perspective. The findings provide relevant theoretical and practical implications and confirm moderate level of awareness of Gen Z towards digital shadow economy in our sample mostly recognizing the concept as “unreported economic activities conducted online that circumvent tax obligations; an illegal operations

within the cyber space that creates unauthorized financial transactions (for both sellers or buyers), thereby denying legitimate (registered) traders (e-retailer) or service providers the income that could be properly recorded, assessed, and reported; and a form of product piracy emerging from production, acquisition, and/or consumption of unauthorized copies of genuine products. The results of the empirical research have revealed that in our sample the most significant factors of DSE include “unfavorable economic situation in the country (high unemployment, low salary)”, “*weak legal framework which could help to control the scopes of cybercrime*”, “*lower prices, better options and conditions*”, “*low tax morality level in the country*” and “*low possibility of detection of purchases from legally non-existent entity without paying tax*”. Factors like usefulness and convenience in online shopping expressed as time saving obtaining a product/service, prevailing stereotypical negative opinion about governmental institutions and public authorities and lack of opportunities to obtain a desired product in the local markets, have been found non-motivating on our sample. Future research should explore additional factors influencing consumer behavior in e-commerce as well as macroeconomic factors. This study contributes to the understanding of how consumers perceive DSE, offering valuable insights for designing effective innovations and strategies in combating and controlling shadow activities online. Overall, the study contributes to the knowledge and understanding of the informal economy in the digital space providing basis for approaches and measures that will raise awareness of the shadow economy in e-commerce motivating online consumers to avoid it.

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