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A Study of Alternative and FinTech Payment Solutions for Airlines

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Inna Romānova[1], Simon Grima[2], Jonathan Spiteri[3], Rebecca Dalli Gonzi[4]

Abstract:

Purpose: *Revolutionary changes in the global economy, together with the development of FinTech and digital-oriented customer preferences, create new opportunities for airline companies in offering innovative solutions for customers, through online and mobile payment methods offered for flight bookings.*
Design/Methodology/Approach: *The research is based on the analysis of structured survey data collected from a questionnaire based on customer satisfaction and perception of payment methods conducted with passengers. An empirical analysis of publicly available information was conducted on the payment options offered by the airlines to passengers.*
Findings: *The analysis of the payment methods available shows different options provided by the leading CEE airlines from the most conservative to the most innovative offering the possibility to pay using FinTech payment solutions.*
Practical Implications: *Development of FinTech and growing competition is an opportunity for airlines to increase their competitiveness through the improvement of customer satisfaction, adapting payment methods to the needs of passengers without substantial investments.*
Originality/Value*: With this study, we aim to investigate the payment methods offered by the top ten Central and Eastern European (CEE) airlines and to discuss this in light of consumer choices and preferences.*

Keywords: *Airlines, FinTech, financial services providers, payment methods.*

JEL Codes: *G29, L93.*

Article type: *Research study.*

[1]*University of Latvia, Latvia; inna.romanova@lu.lv*
[2]*University of Malta, Malta; simon.grima@um.edu.mt*
[3]*University of Malta, Malta; jonathan.v.spiteri@um.edu.mt*
[4]*University of Malta, Malta; rebecca.e.dalli-gonzi@um.edu.mt*

1. Introduction

The quick development and increasing application of information and communication technologies (ICT) in different industries has become unavoidable. Blockchain-based technology, artificial intelligence, cloud technology etc. is an integral part of modern global economy. Besides, changing consumer behaviour towards an increased use of technologies in everyday life has put different industries under additional pressure, forcing them to adapt to the change. The financial industry is not an exception. The use of ICT technologies has created FinTech that is disrupting the financial services industry. Further development of hardware (including various mobile devices) and software as well as a growing convergence of information and communication technologies has contributed to its quick development (Dapp, 2014). FinTech basically is a new market that integrates finance and technology (Arner *et al.,* 2015). The term "Fintech" is related to companies (non-financial) providing financial services by applying software or other ICT technologies. In a broader sense FinTech refers to a digital transformation in financial services (Scardovi, 2017) that substantially changes the industry, reshaping the financial services and redistributing the market.

One of the services that were traditionally provided by commercial banks is "money transfer/payments". Nowadays FinTech companies are actively involving the provision of payment services as money transfer/payment services, which are less knowledge-based and easily standardisable. Important to note, that FinTech companies can provide payment services to customers at lower costs in comparison with commercial banks. This is due to the relatively high level of standardization of payment services, allowing technology-based provision of services as well as substantially lower regulation of financial services provided by non-banks (Romānova *et al.,* 2016). Therefore, the development of FinTech that replaces traditional financial structures with new technology-based processes (Hochstein, 2015) has substantially changed the provision of financial services.

The recently implemented new EU Payment Service Directive (PSD2) that sets up common requirements e.g., for electronic payments, card payments, mobile and online payments in the European Economic Area has contributed to the revolutionary changes in the provision of money transfer/payment services. The Directive allows non-financial companies to provide access to financial services for bank customers, increases the number of potential payment providers thereby wining more and more customers. The most popular FinTech products/solutions for nonbank money transfer are PayPal, TransferWise, SOFORT Überweisung and others. These products are getting more popular in Europe and in CEE countries, particularly. The previously conducted article by Romānova *et al.* (2018) found that low costs and high quality of products/services as well as relatively high speed of transactions are the comparative advantages of non-bank financial services providers in comparison to the traditional financial services providers or banks.

Growing use of technologies and evolution in the financial services industry has disrupted not only the landscape of the financial services providers, but also the ancillary service providers and users of financial services. The airlines industry is not an exception. Changing consumer behaviour towards technology-based solutions has increased interest for online services provided by airlines. According to the latest survey by SITA, which specializes in air transport communications and information technology, nowadays almost 90% of passengers book their flight with self-service technologies (SITA, 2017) online or using mobile devices. On one hand, increasing use of online and mobile channels for booking flights pressures airlines to invest increasingly in digital solutions and cyber security. On the other hand, increasing competition and rising fuel costs put the airlines' profit under pressure. Under such conditions, new opportunities brought about using ICT technologies in business can have a substantial influence on the competitiveness of the airline companies allowing them to obtain comparative advantages in the industry.

One of the potential sources of competitiveness gain can be related to the payment options provided by the airline to passengers in order to ensure online/mobile flight bookings. Revolutionary changes in the global economy, coming along with the development of FinTech and digital-oriented customer preferences, create new opportunities for the airlines companies in offering innovative solutions for customers in terms of online and mobile payment methods offered for online/mobile flights booking.

With this study, we aim to identify current and potential future payment systems for purchasing airline tickets. The results of the study enables an assessment of how airlines should seek to adapt their offered payment methods to the needs of passengers, to reach customers who already use the services of the non-bank financial services providers, for increased competitiveness and customer satisfaction.

2. Literature Review

Digitalization and increasing competition put profit of many companies under pressure. Therefore, competitiveness and the ability to maintain and increase one's loyal customer base become topical. Fintech has substantially changed the industry for companies (non-financial) by providing financial services through the application of software or other ICT technologies. Comparative advantages of non-bank financial services providers are i) low costs, ii) high quality of products/services, iii) high speed transactions. The most popular FinTech products/solutions for non-bank money transfer are PayPal, AliPay, TransferWise. In line with the Directive 2015/2366/EU of the European Parliament and of the Council, the Payment Service Direction (PSD2) allows non-financial companies ("Third Party Payment Providers") to provide access to financial services for bank customers, stimulating creation of innovative IT solutions for payments, savings, lending and other services traditionally covered by banks.

Customer satisfaction is an important element to consider. The two theories that are used in the customer satisfaction debate are disconfirmation paradigm and expectancy-value concept (Barsky, 1992). Disconfirmation theory indicates that customers compare a new service experience with a standard that they themselves have developed (Mill, 2002). The theory presumes that customers make purchases based on their expectations, attitudes, and intentions (Oliver, 1980). Later, during or after consumption, a perception of performance occurs as customers evaluate the experience with the process. This course of action being made complete when a customer compares the actual service performance with their pre-experience standard or expectation. The result is confirmation, satisfaction, or dissatisfaction (Mill, 2002). Customers often make some judgement about a product, its benefits, and the likely outcomes of using the product, according to the expectancy-value theory. People will learn to perform behaviour that they expect will lead to positive outcomes (Tolman, 1932). Their overall attitude is a function of beliefs about an object's attributes and the strength of these beliefs (Mill, 2002). Thus, answering to new market expectations means that any brand-new payment system needs to offer clear benefits to its customers, and in the light of such benefit, one must recognise that digitization in business is not without its challenges.

One of the key factors that must be taken into account before introducing such technologies in any business is whether customers are receptive to these changes. This is because the behavioural science and psychology literature have consistently shown that people are resistant to change, and are predisposed to prefer the way things are currently due to inertia. This behavioural characteristic is known as status quo bias (Samuelson and Zeckhauser, 1988), and reflects the fact that change typically involves some sort of cost in terms of cognitive or physical effort, meaning that people may generally be averse to the introduction of new elements, particularly if processes are deeply embedded or routine. In the case of airline payment systems, the introduction of alternative non-banking methods may instil resistance in customers if these systems are deemed to be inconvenient or cumbersome relative to existing online booking systems, which are not just used within the airlines sector but also in other online shopping scenarios. In addition, loss aversion may kick in, whereby customers fear that changing over may result in potential utility losses relative to the existing way of doing things, further fomenting inertia (Kahneman and Tversky, 1979). Therefore, new alternative payment systems need to offer clear benefits relative to existing ones in terms of improved speed, security and convenience of making payments in order to entice customers, with such benefits clearly communicated to customers (Rogers, 2003).

In this study, we investigate methods of payments provided by airlines to customers booking their flight online using electronic means such as for example a mobile device, laptop or personal computer. We have selected airlines with head offices in the CEE countries, i.e., Albania, Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic, and Slovenia (according to the OECD definition) were utilised in the study. The study was limited

to the largest CEE airline companies in terms of serviced passengers in 2017 according to the Passport database. For the analysis purposes, the airlines with residency in one of the CEE countries providing regular services (scheduled services) to passengers was selected, excluding airline companies offering only charter flights. Based on these criteria top ten CEE airlines were selected, including national carriers and private companies from eight European countries, including Bulgaria (1), Croatia (1), Hungary (1), Latvia (1), Poland (1), Romania (2), Slovenia (1), and the Czech Republic (2).

3. The Payment Methods Offered by the CEE Airlines

The payments methods available can be classified in two groups: traditional payment methods and alternative payment methods. Traditional payment methods are methods generally provided and accepted payment methods as credit or debit cards, bank transfer, and cash. Alternative payment methods in the context of this study comprise methods based on the use of FinTech services/solutions, including PayPal, SOFORT Überweisung, Bitcoins, Alipay and other methods of payments accepted. Traditional payment methods or payment methods offered by traditional financial services providers are summarized in the Table 1.

Table 1. *Traditional payment methods in the CEE airlines, 2019*

Airline	**Country**	**Credit/debit cards**	**Online Banking/ iBank payments**	**Other**
Adria Airways[5]	Slovenia	x	Abanet online bank	
AirBaltic	Latvia	x	iBank payments	
Blue Air	Romania	x		
Bulgarian Airways Group	Bulgaria	x		Debit card registered in ePay
Croatia Airlines	Croatia	x	the Erste NetPay service	
CSA - Czech Airlines	The Czech Republic	x	bank transfer, ePlatBy	UATP
LOT Polish Airlines	Poland	x		
Smart Wings (Travel Service)	The Czech Republic	credit cards		cash at the airport sales desk
Tarom	Romania	x		cash at the airport sales desk
Wizz Air	Hungary	x	bank transfer	cash at the airport sales desk UATP, WIZZ account

Source: *Authors' own table. Adapted from homepages of respective airline companies.*

[5] In October 2019 a bankruptcy proceeding over Adria Airways is initiated (adria.si).

Table 1 shows that all CEE airlines accept credit and/or debit card payments, including Visa, Master Card, American Express, Maestro etc., with the only exception of SmartWings (the Czech Republic). Some airlines also accept payments made by bank transfer providing specially designed payment forms in cooperation with selected banks (Adria Airways, CSA-Czech Airlines). Only some airlines (e.g., AirBaltic, Wizz Air) offer a possibility to pay the flight with the gift vouchers/prepaid vouchers or pay cash at the airport sales desk for the online booking (e.g., Smart Wings, Tarom, Wizz Air).

Alternative payment methods or FinTech service/product related payment methods (payment methods initially offered by non-bank financial services providers) are summarized in Table 2.

Table 2. *Alternative payment methods in the CEE airlines, 2019*

Airline	**Country**	**Alternative payment methods**							
		Pay Pal	**SOFORT Über-weisung**	**iDeal**	**Other payment methods**				
Adria Airways[6]	Slovenia		x	x	Bancontact / Mr Cash	Giropay			
AirBaltic	Latvia	x	x	x			Billpay (Germany only)	Bitcoin	
Blue Air	Romania	x	x	x	Bancontact/ Mr Cash	Giropay	Airplus		
Bulgarian Airways Group	Bulgaria								
Croatia Airlines	Croatia								
CSA - Czech Airlines	The Czech Republic								
LOT Polish Airlines	Poland	x	x	x		Giropay	UnionPay	Alipay, dotpay, Google pay	QIWI Wallet
Smart Wings (Travel Service)	Romania	x							
Tarom	The Czech Republic								
Wizz Air	Hungary								

Source: *Authors' own table. Adapted from homepages of respective airline companies.*

[6] In October 2019 a bankruptcy proceeding over Adria Airways is initiated (adria.si).

Alternative payment methods, including FinTech solutions are offered to the customers of five of out ten largest CEE airlines, four of which allow payments with PayPal (AirBaltic, Blue Air, LOT Polish Airlines and Smart Wings). Only traditional payment services are offered by five out of ten largest CEE airlines: Bulgarian Airways Group (Bulgaria), Croatia Airlines (Croatia), CSA-Czech Airlines AS (The Czech Republic), Tarom TA (Rumania), Wizz Air (Hungary).

Considering the three best airlines in 2019 in Western Europe (according to the World Airline Awards) Lufthansa is a very Fintech-friendly airline offering customers to acquire flight tickets using PayPal, Alipay, WeChat Pay and other alternative methods of payments (Lufthansa, 2019). Austrian Airlines (Austrian Airlines, 2019) and Swiss International Airlines (OPC, 2019) offer only traditional methods of payments. It should be noted, that in some cases optional payment charge may be applied depending on the method of payment and the departure country.

Analysing the payment methods offered by the two largest companies in Eastern Europe, Aeroflot (Russian largest airline) and Ukraine International Airlines (Ukrainian largest airline) are very innovative and modern in terms of payment methods provided to customers, and accept a large number of FinTech payment methods. Aeroflot accepts many Fintech payments including Credit/debit cards, Kiosk, QIWI Kiosk, QIWI Wallet, Yandex.Money, Eleksnet, WebMoney, CyberPlat Kiosks, CyberPlat Wallet, UnionPay Online Payment, Samsung Pay, Apple Pay, Google Pay, cash in Aeroflot Offices (Aeroflot, 2019). Ukraine International Airlines accepts many Fintech solutions as well including Credit/debit cards, bank transfer, Online payment systems such as AliPay, UnionPay, and WeChat Pay (in China), Real-time online payment methods such as Giropay (in Germany), Sofort (in Austria, Belgium, Germany, Switzerland), Finnish E-Banking (in Finland), Ideal (in the Netherlands), EasyPay terminals, cash at UIA ticket offices (Ukraine international airlines, 2019).

Considering the most popular European low-cost airlines (according to the World Airline Awards), EasyJet (EasyJet, 2019) and Norwegian Airlines (Norwegian Airlines, 2019) are rather conservative, offering the traditional methods of payments (e.g., credit/debit cards). Whereas Ryanair additionally accepts the PayPal payments (Ryanair, 2019).

Thus, we can conclude, that a number of airlines in Europe are ready to offer alternative (including Fintech) payment solutions for customers to acquire airlines tickets, with the most popular being PayPal. Under conditions of changing financial services providers industry, changing customer behaviour as well as more online/mobile orientation of business, is necessary to ensure a wider choice for passengers in terms of payment methods allowed. Besides, the main advantage of the use of alternative payment methods as PayPal when acquiring the flight ticket online implies higher level of data security for the customer, as this payment allows

to avoid making card transactions online, particularly, sharing the credit card number with the airline. Furthermore, in this study we investigate the consumer choices and preferences with respect to payment systems currently used and potentially preferred to acquire airline tickets.

4. Data, Methodology and Findings

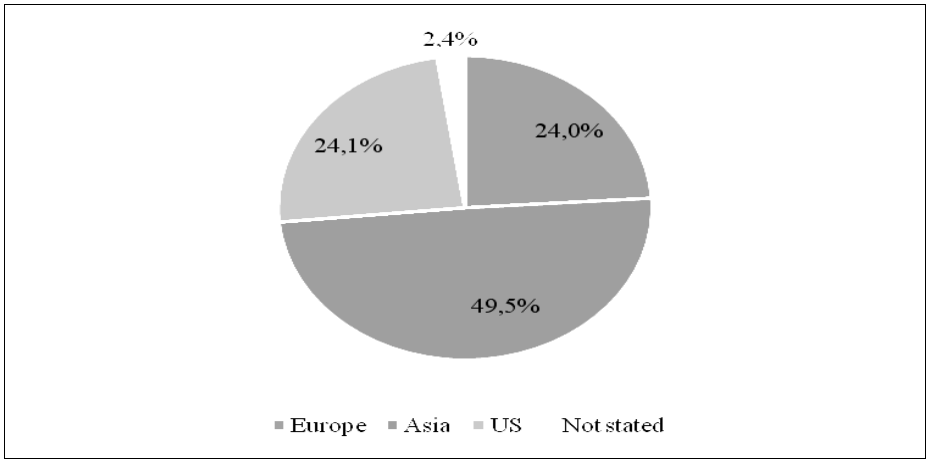
For the purpose of this paper, data was gathered on current as well as potential future payment systems for purchasing airline tickets. A questionnaire was used to investigate the perception of FinTech services in terms of costs, service channels, security as well as quality and efficiency. To this end, an online survey was distributed consisting of a series of 5-point Likert scales (where 1 denotes 'Strongly Disagree' and 5 denotes 'Strongly Agree') and binary choice/categorical questions, targeting general airline customers across the globe. The final sample consisted of 1.133 observations, with respondents from Europe, Asia and the U.S. in order to obtain a global outlook on preferred payment methods within the airline sector. The data was inputted into the Stata software package in order to facilitate the overall analysis. Data was analysed using a combination of parametric and non-parametric techniques. More specifically, the Kruskall-Wallis test was used in order to analyse differences in responses with regards to preferred current and future payment systems, while Ordinary Least Squares (OLS) was used in order to analyse responses according to demographics and other respondent characteristics.

4.1 Sample Characteristics

As highlighted earlier, the sample consisted of 1.133 respondents derived from across the world. As seen in Figure 1, almost half of the sample (49.5%) are from Asia, while the remainder are almost evenly-split between the U.S. and Europe. The gender balance is relatively even, with 50.9% being male and 49.1% female, and on average our respondents are within the 23-41 age brackets, with over 84% gainfully-occupied.

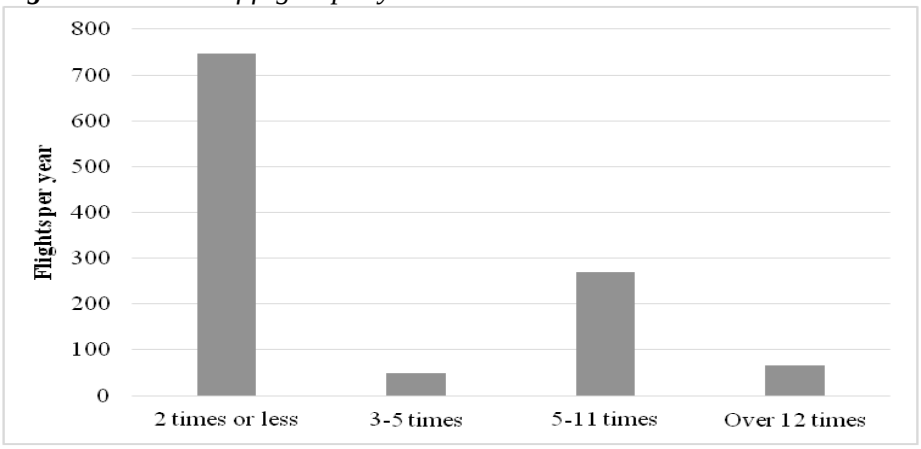
The authors sought to characterise respondents by the frequency with which they travel by air, since this may have a significant bearing in their preferred method of payment. As shown in Figure 2, the vast majority of respondents only fly twice or less per year (747), while in total 386 respondents fly more than 3 times a year. This indicates that the respondents are not frequent air travellers, although it is interesting to note that around 49% of our sample are members of a frequent flier programme.

Figure 1. *Geographical distribution of respondents*



Source: *Authors' construction based on the survey results.*

Figure 2. *Number of flights per year*



Source: *Authors' construction based on the survey results.*

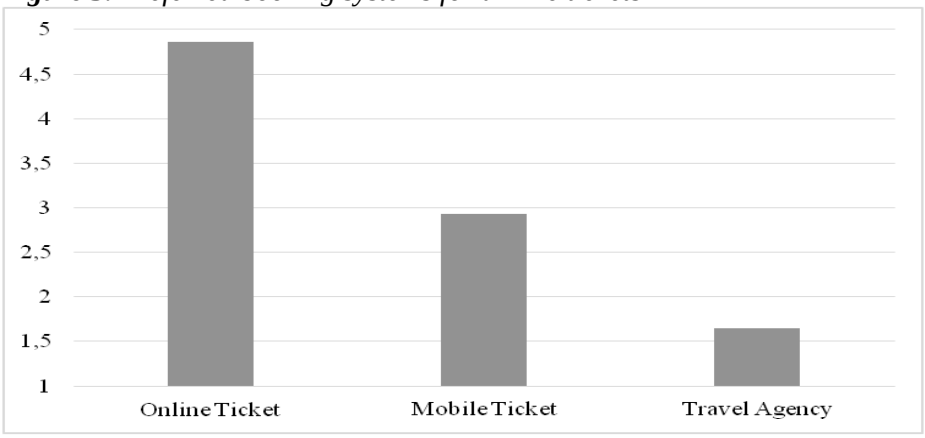
4.2 Airline Payment Systems

Given the sample characteristics, preferred methods of payment when it comes to airline tickets can be seen to. As evident in Figure 3, online tickets emerged as the most popular booking system, followed by mobile phone tickets and tickets acquired via a travel agency.

Thus, the results confirm the predominance of online bookings for the airline industry, and thus the importance of such systems over more traditional outlets like travel agents, although the rise of mobile phone bookings should not be overlooked.

This is also reflected in respondents' preferred method of payment – 1.043 individuals mentioned credit cards as their tool of choice (over 92% of our sample), followed distantly by online banking, which was mentioned by 214 respondents (around 18% of our sample) and PayPal, which was mentioned by 109 respondents (9.6%).

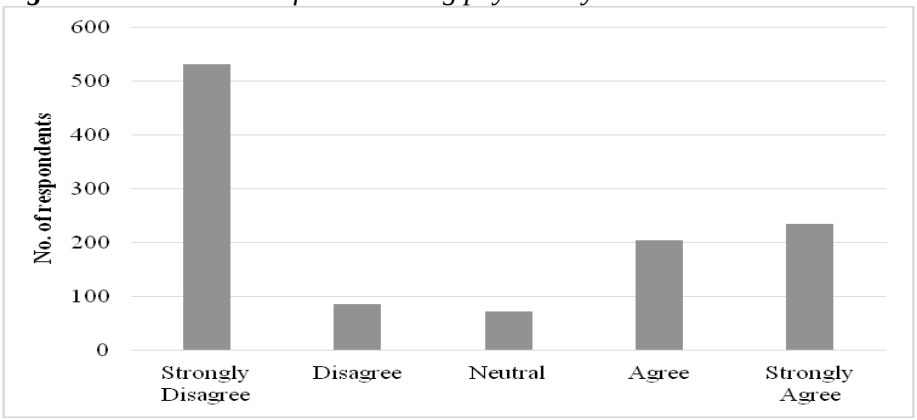
Figure 3. *Preferred booking systems for airline tickets*



Source: *Authors' construction based on the survey results.*

Therefore, it is clear that the widespread use of online booking systems for airline tickets is also resulting in heavy usage of credit cards, given their obvious complementarities, with online banking and PayPal playing a comparatively minor role despite their potential integration with online payment systems, particularly in the case of the latter. In fact, on average our respondents are ambivalent as to the convenience that alternative (non-banking) payment systems offer, with Figure 4 showing that the majority either strongly disagree or disagree with the statement that such systems are convenient.

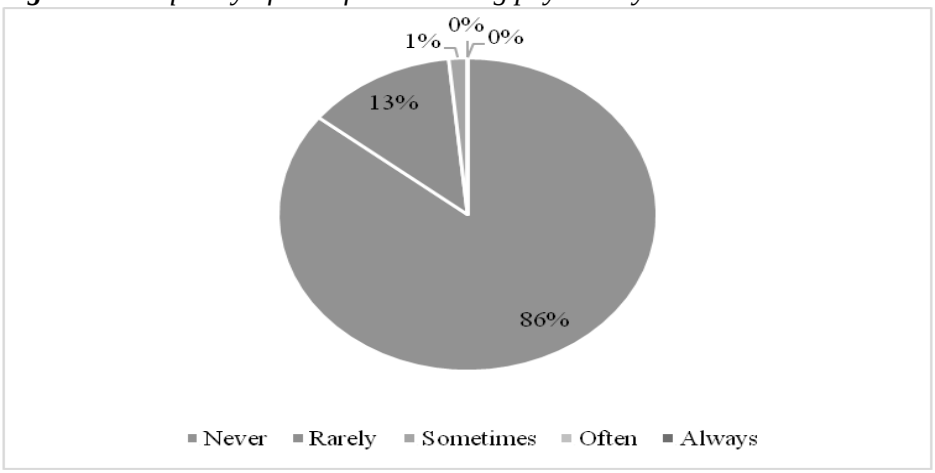
Figure 4. *Convenience of non-banking payment systems*



Source: *Authors' construction based on the survey results.*

Furthermore, Figure 5 also shows that 86% of our sample have never used these methods of payment, with none reporting frequent usage. These findings underscore the continued importance of traditional banks and payment methods, as well as a general inertia when it comes to trying out new non-banking methods, largely as a result of their perceived inconvenience. Nonetheless, it is interesting to note that almost 40% of respondents would consider using PayPal in order to purchase their flight tickets, by far the highest of any non-banking method, and higher even that online banking (13.9%), which shows that there is some scope for movement in this regard.

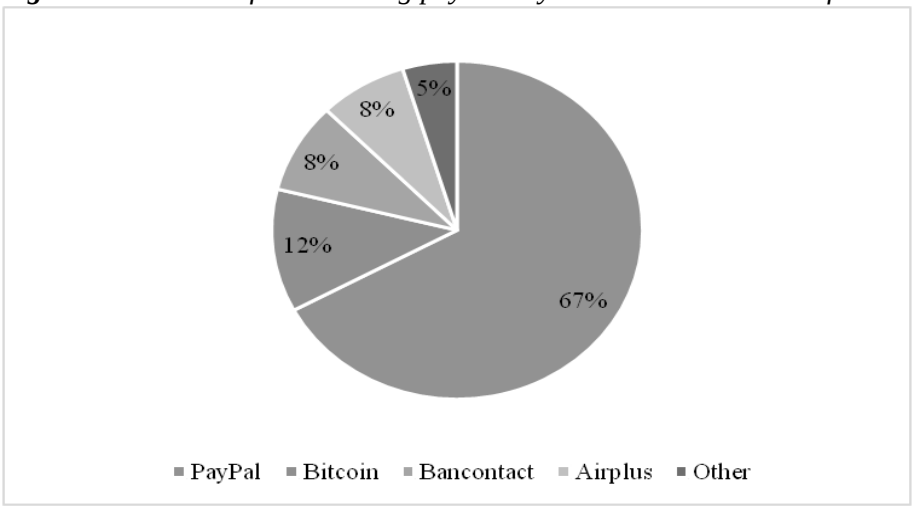
Figure 5. *Frequency of use of non-banking payment systems*



Source: *Authors' construction based on the survey results.*

Next, attention is focused specifically on non-banking payment methods, in order to understand their potential as future payment systems for airline tickets. Figure 6 shows the most widely-cited methods that were mentioned by our respondents as having the greatest potential within the airlines sector in the immediate future. As seen below, PayPal is by far the leading future contender, mentioned by 67% of our sample, followed by Bitcoin (12%) and Bancontact and Airplus (8% apiece). This once again confirms that PayPal is the leading contender to disrupt the traditional banking hegemony that exists in the airline ticket payment system sector, perhaps due to name recognition, the fact that it has been around for a number of years and its easy integration with online booking and mobile systems. It is interesting nonetheless to observe that Bitcoin is the second leading alternative payment system, suggesting that the rise of cryptocurrencies may not be limited solely to niche areas and as virtual financial assets, but potentially as media of exchange, although this will in part depend on airlines' acceptance of such payments.

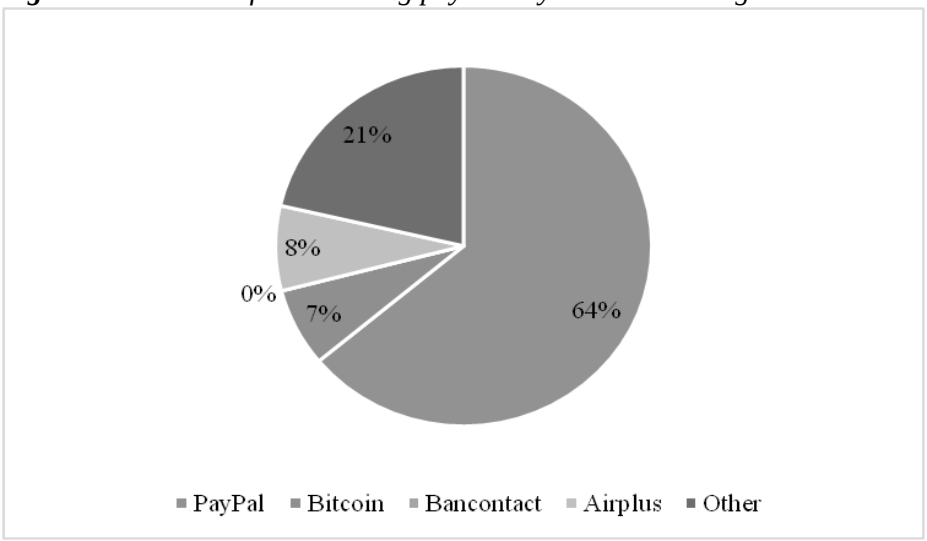
Figure 6. *Potential of non-banking payment systems in the immediate future*



Source: *Authors' construction based on the survey results.*

As a follow-up question, respondents were also asked to mention which alternative payment system has the highest potential for use in the long-term (i.e., five years from now). The results, shown in Figure 7, reiterate the previous findings in terms of PayPal's dominance (64%), although this is slightly lower than before. What is interesting now is that 8% of respondents believe that Airplus has long-term potential, exceeding Bitcoin's rating (7%), although this difference is not statistically-significant (t=0.54; p=0.71), with Bancontact obtaining zero mentions.

Figure 7. *Potential of non-banking payment systems in the long run*



Source: *Authors' construction based on the survey results.*

Thus, it appears as though respondents may not regard Bitcoin as a viable long-term solution to airline payments, potentially reflecting its volatility in recent times. It is also interesting to note that 21% of respondents picked 'other' methods, and a glance at the qualitative statements included reveals that they are largely uncertain as to what will emerge in the long-run.

4.3 Regression Analysis

In this section we relate respondents' alternative payment system choices to various individual characteristics, in order to obtain a better understanding of what is driving variation in this regard. To this end, we specify and estimate the following linear regression model:

$$Pay_i = \beta_0 + \beta_1 Male_i + \beta_2 Age_i + \beta_3 Employed_i + \beta_4 Flights_i + \beta_5 Asia_i + \beta_6 Europe_i + u_i$$

where:
i = Respondent (i=1, 2, …, 1,133);
Pay_i = Various variables denoting an alternative payment system mentioned or rated by respondent i (depending on the variable in question);
$Male_i$ = Dummy variable denoting whether respondent is male or not;
Age_i = Categorical variable denoting respondent age group;
$Employed_i$ = Dummy variable denoting whether respondent is employed or not;
$Flights_i$ = Ordinal variable denoting frequency of flights per year undertaken by each respondent;
$Asia_i$ = Dummy variable denoting whether respondent is based in Asia;
$Europe_i$ = Dummy variable denoting whether respondent is based in Europe;
u_i = Random error term.

The above equation will be estimated for a variety of dependent variables, as described below, using OLS. Robust standard errors will be utilised throughout in order to account for potential heteroscedasticity in our error term.

We first begin by assessing respondents' beliefs regarding the convenience of alternative payment systems, as well as their use. Table 3 reports the regression results for each dependent variable. As seen below, when it comes to convenience older respondents find such systems to be less convenient, as do individuals who fly regularly and people living in Asia. By contrast, men and employed individuals assigned a higher convenience rating, although these results are only statistically-significant at the 10% level. When it comes to actual use of these systems, we find that men and frequent fliers have reported lower usage, while employed individuals reported higher usage. Older respondents also reported higher usage, while Asians and Europeans reported lower use, although these results are only significant at the 10% level. Thus, the most consistent finding across these two regressions is that

frequent fliers are less likely to utilise such payment systems, and believe that they are not very convenient.

Table 3. *Regression results for convenience and use of alternative payment systems*[7]

	Convenience of Systems	Use of Systems
Male	0.19* (0.11)	-0.76*** (0.1)
Age	-0.56*** (0.08)	0.11* (0.06)
Employed	0.27* (0.15)	0.97*** (0.09)
Flights per year	-0.41*** (0.05)	-0.44*** (0.04)
Asia	-0.32*** (0.11)	-0.22* (0.11)
Europe	-0.15 (0.13)	-0.22* (0.12)
R-Squared	0.18	0.17

Source: *Authors' construction based on the survey results.*

This may be attributed to the fact that frequent travellers are likely to value stable, predictable and easily-executable payment systems that can be utilised repeatedly with minimum time and effort expended, and may thus be reluctant to change over to new systems unless the benefits are clear and obvious.

Next, we turn to the immediate potential of various alternative payment systems within the airline industry. The results are shown in Table 4. We start with the PayPal results. As seen below, older individuals and Europeans on average were more likely to mention PayPal as a promising payment system in the immediate future, while on the flipside frequent fliers are less likely to mention it. Matters are reversed somewhat when it comes to Bitcoin, with frequent fliers and the employed more likely to mention it as a prospective payment system, while men, older respondents, Asians and Europeans all less likely to cite it.

These findings line up somewhat with those for Bancontact, since once again we find that frequent fliers and the employed are more likely to mention it, while men and older respondents are less likely. On the flipside, the Airplus results suggest that while men are more likely to mention it, older people, the employed and frequent fliers are less likely to mention it. Similar results are also obtained across the board when considering the long-term potential of each payment system, suggesting that these views are pervasive.

[7] *Robust standard errors in parentheses. *denotes statistical significance at the 10% level; **denotes statistical significance at the 5% level; ***denotes statistical significance at the 1% level.*

Table 4. *Regression results for future potential of alternative payment systems*[8]

	PayPal	Bitcoin	Bancontact	Airplus
Male	0.03	-0.07***	-0.16***	0.14***
	(0.03)	(0.02)	(0.02)	(0.02)
Age	0.34***	-0.08***	-0.05***	-0.09***
	(0.02)	(0.01)	(0.01)	(0.01)
Employed	0.04	0.35***	0.27***	-0.07***
	(0.04)	(0.03)	(0.03)	(0.02)
Flights per year	-0.19***	0.23***	0.13***	-0.02***
	(0.01)	(0.01)	(0.01)	(0.01)
Asia	0.02	-0.03***	-0.02	0.02
	(0.03)	(0.01)	(0.02)	(0.02)
Europe	0.07***	-0.04**	-0.02	0.02
	(0.03)	(0.02)	(0.02)	(0.02)
R-Squared	0.36	0.51	0.31	0.12

Source: *Authors' construction based on the survey results.*

Thus, these contrasting results show how different payment systems may appeal to different individuals, demographics and use-cases. More specifically, older respondents are generally less open to these alternative systems, with the clear exception of PayPal, which is unsurprising given that it has been in mainstream use for longer than the rest. It is also interesting to note that frequent air travellers are more open to systems that can integrate easily within existing frameworks or booking paradigms.

For example, Bitcoin in reality constitutes a new currency, rather than a different payment system per se, and thus would not require much in the way of switching systems, whereas Bancontact issues its own payment cards, which would thus be the equivalent to utilising a new credit or debit card for the end-user as opposed to a different payment system entirely. By contrast, anything that requires a material difference or alteration to existing systems of payment is not considered to be viable by frequent fliers.

[8]*Robust standard errors in parentheses. *denotes statistical significance at the 10% level; **denotes statistical significance at the 5% level; ***denotes statistical significance at the 1% level.*

5. Conclusions and Evaluation

This study has sought to analyse consumer choices and preferences with respect to payment systems used to acquire airline tickets. The authors designed and administered an online survey in order to gauge these views, together with a variety of demographic and respondent characteristics, across a sample of individuals across the globe.

The results from the data analysis suggest that online bookings represent the leading method for purchasing airline tickets today, with mobile payments also featuring, while bookings via travel agencies represent only a tiny fraction of the market. These choices in turn inform the choice of payment system employed, with the vast majority opting for credit card or online banking.

By contrast, very few of the respondents utilise alternative, non-banking payment systems, with the majority citing lack of convenience as a potential issue, although others may exist. A closer glance at the data indicates that among these alternatives, PayPal has by far the highest potential, which reflects its widespread use in other domains and the fact that it is now well-established in the mainstream. Other systems like Bitcoin and Airplus were also cited, albeit to a much lesser extent, both as an immediate alternative as well as a more long-term solution.

Nonetheless, there is considerable heterogeneity across respondents in terms of their preferred payment system, indicating that these may be pitched to different cohorts based on use case and/or demographics. In particular, it was noted that frequent fliers are less likely to opt for systems that require a material change in the way that existing bookings are affected, namely PayPal and Airplus, and are more open to methods that integrate relatively seamlessly with current booking portals, like for example Bitcoin and Bancontact.

Therefore, the findings in this paper shed light on the difficulties that alternative, non-banking payment systems face when trying to penetrate the market for online purchases, at least within the airline travel sector. Some of this consumer reluctance to try out new systems is borne out of low perceived levels of convenience associated with these systems, which underlines the need for much clearer communication of benefits and gains relative to existing systems, and greater ease of integration with online and mobile booking systems. These efforts would assist in overcoming inertia and status quo bias when it comes to the use of alternative payment systems.

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