

DRIVERS OF DIGITAL WALLET USAGE: IMPLICATIONS FOR LEVERAGING DIGITAL MARKETING

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***Abstract:** In the ever growing era of digital technology, the world is advancing towards e-transactions with a tremendously positive approach. The facilitating service available in the market is digital wallet which alludes itself to be the best possible medium of e-transactions. Digital wallet, being an intermediary between buyer and seller, proffers the request of the buyer to pay for the item to be purchased. Aggrandizing to the power of digital wallets, the smartphones have reached the stage of enormous penetration with the availability of stupendous variety of e-transaction service providers. In the advent of discovering the adoption behavior of consumers towards digital wallet, this study focuses on tracing the factors that drive the usage of digital wallet among youth in the state of Punjab. A survey method in the form of structured questionnaire was adopted to collect first hand data. The findings suggest that controllability & security, societal influence & usefulness and need for performance enhancement are the factors which drive the usage of digital wallet among youth in the state of Punjab.*

***Keywords:** Digital Wallet, e-transactions, adoption drivers*

1. INTRODUCTION

Today's mobile payments enclosure is non-institutionalized with significant players drawing near the business sector with their own restrictive frameworks and arrangements. Since last couple of years the utilization of digital wallets has taken quite a leap. Digital wallets have been included as payment alternative by many e-business players along with existing net banking or card based payment methods. With smartphones becoming an inseparable part of one's life and hence a convenient way of making digitalized payments, the adoption of digital wallets has been tremendously increasing. Through digital wallets, the payment infrastructure with immense advancement in technology has become highly consumer friendly. With continually expanding level of infiltration of portable cell phones, digital wallets have

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been anticipated to bring the next coherent stride in transit to a cashless society (Apanasevic, 2013). Till date relatively less number of individuals have been utilizing digital wallet, as compared to mobile phone users. The fundamental obstacle is attitude of individuals, who require some serious energy to adjust to a yet another innovation. In a nation such as India where larger part of clients still favors Cash-On-Delivery, it is difficult to fasten the pace of process of innovation diffusion such as digital wallets. In fiscal year 2012-13 and 2014-15, M-wallet (a form of digital wallets) transactions grew 180 per cent, compared to 80 per cent growth in mobile banking transactions (Anand, 2015). The growth rate in use of smart phones and tremendous increase in use of mobile internet in Punjab (a state of India) specifically has obligated to come up with this study on intention to use of digital wallets. According to the report of TRAI there were 254.4 million users of internet in India in Sep 14 out of which 10.50 million were from Punjab (Telecom regulatory authority of India, 2015). There are 34.51 internet subscribers per 100 persons in Punjab which is at second position in India after Delhi which has 80.37 internet subscribers per 100 persons (Telecom regulatory authority of India, 2015). This study intends to examine the perplexing environment of digital wallet usage as a payment instrument in exchanges where cash is exchanged from buyer to seller in return for items or administrations.

2. REVIEW OF LITERATURE

The theoretical aspects of electronic commerce were critically examined to understand the substructure of behavior towards intention to use of digital wallet. The literature review specifies the consumer behavior towards the adoption of digital wallets by taking into consideration various factors motivating adoption of technology.

Different factors have come into play which affect the adoption of digital wallets as a payment medium such as trust, expressiveness and perceived ease of use, playing a crucial role in facilitating adoption of digital payment solutions (Padashetty & SV, 2013). Safety and security of payment as compared to traditional methods acts as one of the other driving force (Rai, *et al.*, 2012). Security and privacy were the major concerns for the consumers which affect the adoption of digital payment solutions (Dahlberg & Mallat, 2002). Security perception plays a significant role in adoption of mobile wallets. Perceived security and privacy defines the extent to which consumers assume that digital wallet payment method is safe and secure. While perceived usefulness motivates users via enhancement in their self-working capabilities. Factors like authentication, confidentiality, integrity of data were identified to have a positive effect on users trust in digital payment methods. Digital wallet payments bring extra convenience to shoppers by offering flexible payment additions and accelerating exchanges (Liu & Zhuo, 2012). Although perceived usefulness was considered to be the most convincing predictor of digital payment solutions but self-efficacy too plays a major role in adoption of digital payment solution as consumers with higher degree of self-efficacy were more inclined towards the use of digital wallet as their comfort level with technology use was high (Jaradat & Faqih, 2014). Perceived behavioral control which

was defined as individual's perception about the difficulty level of specific task significantly affects the adoption behavior of digital wallet (Bhatti, 2007). Social influence was an important determinant for both the intention to use new technology and attitude towards the use.

Demographics also play an important role in adoption of any new technology. In India consumers younger than 35 years of age are nearly double to download a mobile app in their mobile phone in comparison to over 50 years of age. More than half of those consumers, use digital wallets at least once in a week, most commonly for exploiting special offers such as coupons, discounts etc.(Digital Research Inc., 2013). Concept of performance expectancy acts as an important factor that influences the adoption of mobile payment solutions (Alkhunaizan & Love, 2012). Pousttchi (2003) found that confidentiality of data was most important criterion for adoption of mobile payment solutions thus relating to the results of previous studies of perceived privacy and security (Amoroso & Watanabe, 2012). The relative advantage which digital wallets offers are convenience, security and affordability over other payment methods specially while transferring money (Wamuyu, 2014). Complexity is also seen as one of the attributes which govern digital wallets adoption and use (Wamuyu, 2014). Time convenience was found to be an important factor in adoption of digital wallets and its intention to use (Cliquet, *et al.*, 2014). Some people also see this in terms of ease of use which is the degree to which a person finds using a technology free of effort. It is demonstrated that convenience and handiness of a technology plays an important role in adoption of electronic commerce and further use of digital wallets (Anckar, *et al.*, 2003).

Given the conception that there were diverse reasons behind digital wallet usage, the following problem of present study was conceptualized:

Research Objective: To identify the factors driving use of Digital Wallet.

3. RESEARCH METHODOLOGY

The research design was elucidated to be of descriptive type, as the present study tried to identify the factors driving use of digital wallets in state of Punjab. The period of this study was quarter four of 2015.

3.1. Sample and Procedure

Large size of the population coupled with data's quantitative character advocated the use of sample survey method. The sample size of the present study was 386 users of digital wallet in state of Punjab. Depending of the population under study at 5% margin of error and considering 95 % confidence interval, a proposed sample size of 377 was required but after data collection 386 usage responses were identified which were used for the purpose of analysis. For the identification of sample from population under study snowball sampling was used, which is a non-probabilistic sampling technique. The respondents were chosen on basis of three criteria, firstly the respondent

must be an internet user as there are 10.50 million internet users in Punjab (Telecom regulatory authority of India, 2015). Secondly the respondent should be a youngster, aged between 15 to 29 years. As per national youth policy of India the age of youth is defined as age between 15 to 29 years (Ministry of youth affairs and sports, 2014). Thirdly, the respondent must have used digital wallet once in a lifetime. Apart from this, there was no limitation as to who can take the survey. Age of majority of the respondents was in the range of twenty-one to twenty-five years.

3.2. Measures

Primary data in the form of the response of digital wallet users was obtained from respondents with the help of a structured questionnaire. The face and content validity was first done by extensive review of the relevant literature. Subsequently these items were submitted to three academicians for evaluation. The reliability of the questionnaire was measured using Predictive Analytics Software SPSS and was found to be 0.926.

3.3. Administration of the Instrument

After accessing the reliability and validity, the final instrument was administered using a combination of personal and e-mail method. The questionnaire was administered online using services of google forms. The link of the survey was shared with respondents using services of Gmail from account of researchers. Personal interaction were made with the respondents and data was also collected in person.

4. IDENTIFYING FACTORS MOTIVATING DIGITAL WALLET USAGE

With the intent of discovering the underlying factors that drive the usage of digital wallet in state of Punjab exploratory factor analysis was opted to curtail the large number of items into relatively smaller number of factors. Items identified after application of exploratory factor analysis were reduced in number compared to original item set, but had been found capable of accounting to a large share of variability in the items. Based on these items different factors were identified and the identity of each factor was determined considering the items correlation with that factor. Different items were found to have internal structure evidence showing a validity evidence suggesting that items line up in a predictable manner.

The value of KMO being 0.926 (Table 1) supported the objective of reducing several variables into fewer factors by showing measures of appropriateness of factor analysis. Hypothesis of correlation matrix being an identity matrix was not accepted considering test of sphericity (Bartlett's). Significance value lead to rejection of null hypothesis and concluded about correlations in the data set that were appropriate for EFA.

The data collected to investigate the drivers of digital wallet usage was on a five choice Likert scale where 1 represented Strong dis-agreement and 5 represented strong agreement. The data collected was distinct so principal component analysis procedure

Table 1
KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.926
Bartlett's Test of Sphericity	Approx. Chi-Square	4091.596
	df	465
	Sig.	.000

was best suited procedure with no distributional assumptions and this method was used to extract the underpinnings of factors among the complete set of variables.

Following these rules, seven factors were extracted (Table 2). Together these seven factors were able to justify approximately 56% of the variance of the variables/items.

Table 2
Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.544	30.788	30.788	9.544	30.788	30.788
2	1.626	5.244	36.033	1.626	5.244	36.033
3	1.405	4.531	40.564	1.405	4.531	40.564
4	1.307	4.218	44.781	1.307	4.218	44.781
5	1.224	3.948	48.729	1.224	3.948	48.729
6	1.041	3.36	52.089	1.041	3.36	52.089
7	1.001	3.23	55.319	1.001	3.23	55.319
8	0.938	3.027	58.346			
9	0.914	2.948	61.294			
10	0.876	2.826	64.12			
11	0.85	2.742	66.862			
12	0.777	2.506	69.368			
13	0.743	2.397	71.765			
14	0.72	2.324	74.088			
15	0.703	2.269	76.357			
16	0.637	2.055	78.413			
17	0.613	1.977	80.389			
18	0.565	1.823	82.212			
19	0.547	1.765	83.977			
20	0.524	1.69	85.667			
21	0.503	1.621	87.288			
22	0.491	1.585	88.873			
23	0.451	1.454	90.327			
24	0.439	1.415	91.741			
25	0.418	1.348	93.09			
26	0.398	1.283	94.372			
27	0.394	1.272	95.645			
28	0.366	1.181	96.826			
29	0.355	1.146	97.972			
30	0.324	1.047	99.018			
31	0.304	0.982	100			

Extraction Method: Principal Component Analysis.

Approximately 56% of variance can be considered as satisfactory as appropriate number of factors have been extracted from original set of variables. These factors are satisfactorily enough to account for the substantial portion of variance of all the variables (Hair, Black, Babin, & Anderson, 2009).

A review of preliminary loading of factors advocate that appropriate explanation was achievable via principal component analysis, as it converged in 29 iterations. One important condition of that results were not non-positive definite was also met making proceeding with interpretation possible (Fig. 1).

Communalities which were interpreted as Multiple R^2 during multiple regression indicating amount to which any factors clarify the variance of items were found to be fine, providing supplementary signal about appropriateness of results for interpretation (Table 3).

Having greater assertion about the appropriateness of principal component analysis, explanation of results was approved. Now Varimax rotation which is orthogonal in nature was applied to maximize the variance of squared loadings of a factor on all items in its factor matrix. In this rotation each unique item inclines towards one of the factors, and every factor indicates a small number of items leading to

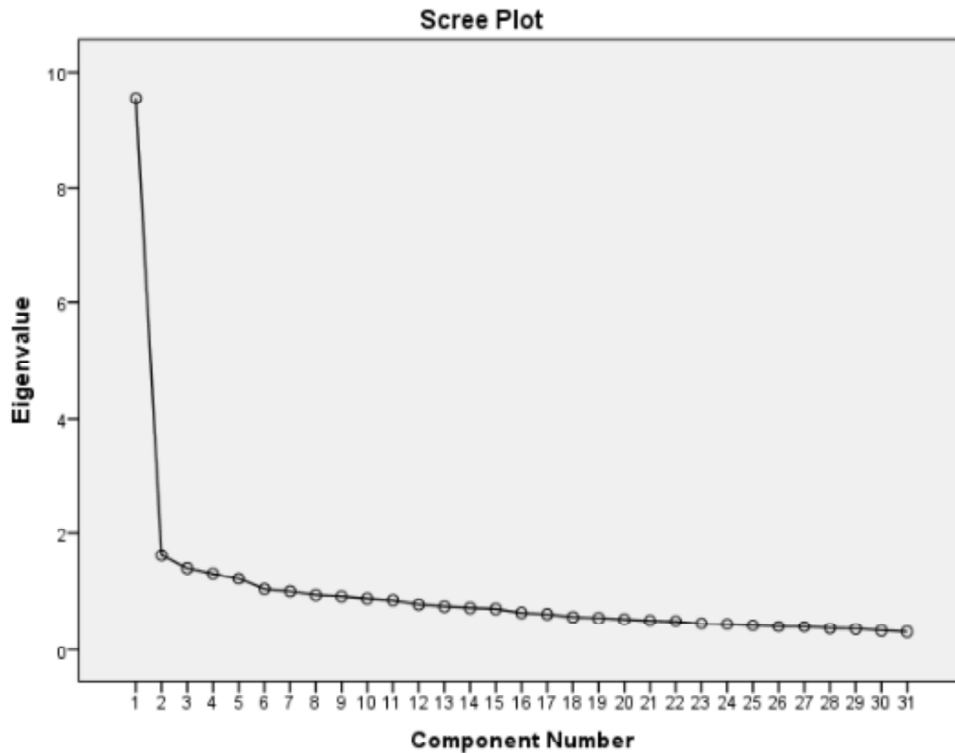


Figure 1: Scree Plot

Table 3
Communalities

<i>Communalities</i>		
	<i>Initial</i>	<i>Extraction</i>
Service is available at all Digital Platforms	1	0.719
I can easily customize my payments	1	0.688
it's trendy to use	1	0.46
I can easily customize my privacy settings	1	0.556
my friends use it	1	0.507
of easy availability of internet	1	0.494
almost every e-commerce site supports Digital Wallet payment	1	0.552
their service providers are highly reliable	1	0.457
it is easy to use	1	0.563
it helps me to keep track of my transaction history	1	0.616
it helps me in paperless transaction	1	0.693
transaction can easily be refunded in case of default	1	0.509
I find it playful	1	0.588
I am able to make payments from anywhere	1	0.564
it is free to use	1	0.57
people who influence my behaviour think I should use it	1	0.628
I can avail diff types of discounts	1	0.639
I can avail cash back	1	0.58
it give me greater control over my day to day transactions	1	0.519
it helps me to improve my social identity	1	0.556
it ensures error free transaction	1	0.643
it keeps my payment credentials secure	1	0.605
it is safe from internet frauds	1	0.446
I feel excited to use it	1	0.598
there are only few steps to complete the transaction	1	0.476
registration fee is adequate	1	0.461
it is hassle free to setup	1	0.545
it is more convenient than net banking	1	0.491
it helps me to pay more efficiently than traditional methods	1	0.476
it helps me to control my spending habits	1	0.479
I think I can use it	1	0.473

Extraction Method: Principal Component Analysis.

simplification of understanding of results. Reviewing the rotated component matrix suggested that seven factors club the variables in a theoretically understandable manner (Table 4).

Table 4
Rotated Component Matrix

<i>Rotated Component Matrix</i>							
	<i>Component</i>						
	1	2	3	4	5	6	7
it helps me to improve my social identity	0.64						
it ensures error free transaction	0.631						
it keeps my payment credentials secure	0.628						
it helps me to control my spending habits	0.618						
it give me greater control over my day to day transactions	0.567						
it is safe from internet frauds							
registration fee is adequate							
their service providers are highly reliable							
I can avail diff types of discounts		0.606					
I can avail cash back		0.599					
it is more convenient than net banking		0.584					
people who influence my behaviour think I should use it		0.537					
it is free to use							
it is hassle free to setup							
it helps me to pay more efficiently than traditional methods							
it helps me in paperless transaction			0.745				
it helps me to keep track of my transaction history			0.664				
it is easy to use			0.609				
almost every e-commerce site supports Digital Wallet payment							
my friends use it				0.632			
of easy availability of internet				0.606			
I find it playful							
I can easily customize my privacy settings							
it's trendy to use							
I can easily customize my payments					0.807		
Service is available at all Digital Platforms					0.734		
transaction can easily be refunded in case of default						0.581	
I am able to make payments from anywhere							
I feel excited to use it							0.742
there are only few steps to complete the transaction							
I think I can use it							

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 29 iterations.

From seven identified factors, four factor were dropped as these included of two or less than two items with moderate communalities. Such kind of factors are treated as poorly defined factors and needs to be eliminated. Due to this reason, four factors were not been considered (Brown, 2015).

Rest three factors having salient loadings and with high factor determinacy were deemed to be considered as factors explaining the usage motivation of digital wallets.

- First Factor was a collection of items which indicate towards the improvisation of social status of the consumer in terms of security, safety of payment credentials, expenditure controlling feature of Digital Wallet, assurance of error free transactions and providing a greater control over day to day monetary transactions indicates towards the security oriented performance enhancing capability of digital wallet, so this factor was named as *Controllability & Security*, as this factor helps in increasing the performance of an individual.
- Second Factor considers four items in its shade, first being the effect of people who influence my behavior regarding usage of Digital Wallet, the availability of discounts and availability of cashbacks and the convenience involved as compared to transactions of net banking. So this factor was named as *Societal Influence & Usefulness*.
- Third Factor was basket of items related to transaction and ease of use. It defined the ability of digital wallet to transact more efficiently than other methods of payments either in terms of physical evidence (Paperless) of transactions or to keep a track record of it. Aggrandizing to the capability of digital wallet, respondents' precepts that it is easy to make payment through digital wallet, thus it embraces that digital wallet can be used to transact in a more efficient manner by a consumer in day-to-day life. So this factor was named as Need for performance enhancement.

5. CONCLUSION

The results from this study highlighted on different factors that motivated people to use digital wallets for making payments. People in Punjab have been found have been found using digital wallets due to the motives of controllability & security, societal influence & usefulness and need for performance enhancement. This study indicates that people of Punjab use any type of digital wallet due to one or all of these identified motives. Marketer's need to base their policies for promoting digital wallets around these motives that people consider while using such products or services.

6. LIMITATIONS AND FUTURE RESEARCH

The uneven age ratio may be one limitation in present study with majority of the participants belonging to the age category of 21-25 years. This unbalanced sample ratio makes it grim to generalize the results based on age differences. The results of present study also has created contemporary future research directions. Future research can focus on different micro-cultures within India. A comparative study of Indian culture with some other country or culture can also be initiated to study motivations for digital wallet usage.

References

- Alkhunaizan, A. M. & Love, D. S., (2012), What drives mobile commerce? An empirical evaluation of the revised UTAUT model. *International journal of management and marketing academy*, 2(1), pp. 82-99.
- Amoroso, D. L. & Watanabe, R. M., (2012), Building a research model for mobile wallet consumer adoption: The case of mobile suica in Japan. *Journal of theoretical and applied electronic commerce research*, 7(1), pp. 94-110.
- Anand, N., (2015), *Cashing in on Virtual Wallets*. [Online] Available at: http://www.business-standard.com/article/finance/cashing-in-on-virtual-wallets-115091701045_1.html [Accessed 23 November 2015].
- Anckar, B., Walden, P. & Carlsson, C., (2003), *Factors Affecting Consumer Adoption Decisions and Intents in Mobile Commerce: Empirical Insights*. Slovenia, BLED 2003 Proceedings.
- Apanasevic, T., (2013), Obstacles to investments in mobile payments: The perspective of merchants. *CMI International Conference*.
- Beaudry, A. & Pinsonneault, A., (2010), The other side of acceptance: Studying the direct and indirect effects of emotions on information technology use. *MIS Quarterly research article*, 34(4), pp. 689-710.
- Bhatti, T., (2007), Exploring factors influencing the adoption of mobile commerce. *Journal of internet banking and commerce*, 12(3), pp. 1-13.
- Carton, F. et al., (2012), Framework for mobile payments integration. *Electronic journal information systems evaluation*, 15(1), pp. 14-25.
- Chandorkar, A., (2015), *The future of Indian Digital Wallets*. [Online] Available at: <https://www.capgemini.com/blog/capping-it-off/2015/03/the-future-of-indian-digital-wallets> [Accessed 15 November 2015].
- Cliquet, G., Coupey, K. P., Hur, E. & Gahinet, M. C., (2014), Shopping with a Smartphone: A French-Japanese Perspective. *Heft 2 · 2. Quartal 2014*, February, Issue 2, pp. 96-106.
- Cole, A., McFaddin, S., Narayanaswami, C. & Tiwari, A., (2009), *Toward a mobile digital wallet*, New York: IBM.
- Dahlberg, T. & Mallat, N., (2002), *Mobile payment service development - Managerial implications of consumer value perceptions*. s.l., ECIS.
- Digital Research Inc., (2013), *Mobile application and Digital Wallet usage*, USA: Cashstar.
- Ekollu, G. & Patil, S., (2014), *Digital Wallets: Cashless through digitalisation*. [Online] Available at: <http://www.abc.net.au/technology/articles/2014/09/29/4096724.htm> [Accessed 15 November 2015].
- Eze, U. C., Gan, G. G. G., Ademu, J. & Tella, S. A., (2008), Modelling user trust and mobile payment adoption: A conceptual framework. *Communications of the IBIMA*, Volume 3, pp. 224-231.
- Fox, G. et al., n.d. Using smart phones as digital wallets. Volume INFO-I 399, pp. 1-13.
- Fraunholz, B. & Unnithan, C., (2005), *Inhibitors and facilitators for mobile payment adoption in Australia: A preliminary study*. California, IEEE.
- Hair, J. F., Black, W. C., Babin, B. J. & Anderson, R. E., (2009), *Multivariate Data Analysis*. New York: Pearson Prentice Hall.

- Heijmans, J., (2012), Trustworthy Tap - Payment with a MobileWallet. *Thesis master informatiekunde programma human centered multimedia*.
- Islam, M. A., Khan, M. A., Ramayah, T. & Hossain, M. M., (2011), The adoption of mobile commerce service among employed mobile phone users in Bangladesh: Self-efficacy as a moderator. *International Business Research*, 4(2), pp. 80-89.
- Ismail, H., Muhayiddin, M. N. & Elsadig, M. A., (2011), *User acceptance of an electronic dinar payment system in Malaysia*. Kuala Lumpur, IBIMA.
- Jacobs, A., (2013), *Digital wallet roadmap 2013 - The Fast Lane to Driving Consumer Adoption*, s.l.: comSCORE.
- Jaradat, M.-I. R. M. & Faqih, K. M. S., (2014), Investigating the moderating effects of gender and self-efficacy in the context of mobile payment adoption: A developing country perspective. *International Journal of Business and Management*, 9(11), pp. 147-169.
- Kristoffersen, S., Synstad, a. & sorli, k., n.d. Users' perception of mobile payment. *Int. J. Knowledge Management Studies*, X(Y), pp. 122-143.
- Liu, S. & Zhuo, Y., (2012), The consumer implications of the use of electronic and mobile payments systems. pp. 1-49.
- Locander, W. B. & Hermann, P. W., (1979), The Effect of Self-Confidence and Anxiety on Information Seeking in Consumer Risk Reduction. *Journal of Marketing Research- American Marketing Association*, 16(2), pp. 268-274.
- Ministry of youth affairs and sports, (2014), *National youth policy*. s.l.: Government of India.
- Nassuora, A. B., (2013), Understanding factors affecting the adoption of m-commerce by consumers. *Journal of applied sciences*, 13(6), pp. 913-918.
- Ouyang, Y., (2012), A use intention survey of mobile banking with smart phones - an integrated study of security anxiety, Internet trust and TAM. *Innovative Marketing*, 8(1), pp. 15-20.
- Padashetty, D. S. & SV, K. K., (2013), An Empirical Study On Consumer Adoption Of Mobile Payments In Bangalore City- a case study. *ResearchersWorld -Journal of Arts, Science & Commerce*, IV(1), pp. 83-94.
- Park, J., Snell, W., Ha, S. & Chung, T. L., (2011), Consumers' post-adoption of m-services: Interest in future m-services based on consumer evaluations of current m-services. *Journal of electronic commerce research*, 12(3), pp. 165-175.
- Pedersen, P. E., (2001), *Adoption of mobile commerce: An explanatory analysis*, s.l.: Foundation for Research in Economics And Business Administration.
- Pousttchi, K., (2003), *Conditions for acceptance and usage of mobile payment procedures*. Vienna, MPRA.
- Rai, N. et al., (2012), M-wallet: An SMS based payment system. *International Journal of Engineering Research and Applications*, Issue ISSN: 2248-9622, pp. 258-263.
- Rao, S. & Troshani, I., (2007), A conceptual framework and propositions for the acceptance of mobile services. *Journal of Theoretical and Applied Electronic Commerce Research*, 2(2), pp. 61-73.
- Slade, E., Williams, M. & Dwivdei, Y., (2013), *Extending UTAUT2 To Explore Consumer*. s.l., UK Academy for Information Systems Conference Proceedings 2013.

- Taghiloo, M., Agheli, M. A. & Rezaeinezhad, M. R., (2010), Mobile based secure digital wallet for peer to peer payment system. *International Journal of UbiComp (IJU)*, 1(4), pp. 1-11.
- Telecom regulatory authority of India, (2015), *The Indian telecom services performance indicators*, New Delhi: Telecom regulatory authority of India.
- Vasileiadis, A., (2014), Security concerns and trust in the adoption of m-commerce. *Social technologies*, 4(1), pp. 179-191.
- Viehland, D. & Leong, R. S. Y., (2007), *Acceptance and use of mobile payments*, Toowoomba: ACIS.
- Wamuyu, P. K., (2014), The role of contextual factors in the uptake and continuance of mobile money usage in kenya. *The Electronic Journal of Information Systems in Developing Countries*, 64(4), pp. 1-19.
- Yang, K. & Forney, J. C., (2013), The moderating role of consumer technology anxiety in mobile shopping adoption: differential effects of facilitating conditions and social influences. *Journal of Electronic Commerce Research*, 14(4), pp. 334-347.
- Zmijewska, A., Lawrence, D. E. & Steele, D. R., (2004), *Towards understanding of factors influencing user acceptance of mobile payment systems*. s.l., IADIS.