



# ANALYSIS OF COMMERCIAL CIRCULATION CASH-FLOW AND CONSUMER INTERNET WEBSITE CONSUMPTION

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## -----ABSTRACT-----

*Purchasing items online is the current trend. There are many ways to check out the consumption of goods.*

*This research uses MDS technology to explore the relationship between different groups of consumers' purchase amount on the website and the amount of money on the website.*

*The results present that the amounts of one item purchased by consumers on the TWD 2000-2999 most concept the cash-flow attributes than others groups on the Internet website.*

**KEYWORDS:** cash-flow, Internet website-----

## MOTIVATION AND AIM

Commercial activities cannot be separated from the links of life.

The root of the commercial circulation function, from the need for better use of computing power and computer technology in enterprises and governments to improve interaction with customers, business processes, intra-enterprise and inter-enterprises the exchange of information (Kalakota and Whinston, 1996).

The commercial circulation function includes business-flow, logistics, cash-flow, people-flow, and information-flow.

Cash-flow in e-commerce refers to how money completes the ownership conversion on the Internet. In the virtual Internet world, because of the confidentiality and standardization of money information transmission, many transfer procedures are digitized and difficult to be interpreted, and they are easily questioned by consumers.

General, cash-flow, refers to the circulation of funds, that is, the tools used by enterprises and enterprises or consumers for transactions, such as cash payment, ATM, exchange, and bill exchange.

The difference between traditional cash-flow and modern cash-flow, is explained as follows (and see the Table 1):



Table 1 The difference between traditional cash-flow and modern cash-flow

Traditionally cash-flow transaction tools	Modernization cash-flow transaction tools
Use the credit card machine provided by the bank	Credit card
Cash	Remittance
Check transaction	Cash card
Gift certificate	Stored value card
Remittance	Debit card
Bill of Exchange	ATM card
	Electronic card
	Credit card

Traditionally cash-flow: Most of the traditional cash flow operation methods use manpower. For example, when paying cash, you need to count banknotes and change money, which not only wastes time, but also prone to the risk of robbery or receiving counterfeit banknotes.

Modernization cash-flow: Modern cash-flow means that people can transfer money or engage in transactions without using human resources and without seeing banknotes. Because all transactions and data are transmitted by telecommunication transmission, the security and convenience are also higher. Such as e-money (charge card, multi-function stored-value card), plastic money (debit card, credit card), etc.

In addition, the people choose the exchange tools by they consume, usually consider that the as reasons following:

1. Safety  
 Security is the primary consideration of the cash-flow. The security of trading tools must be ensured and not easy to be stolen or lost.  
 For example: Buying a large amount of goods by check or transfer that will be safer than withdrawing large amounts of cash.
2. Conveniences  
 Businesses selling goods should provide multiple payment methods for transactions to increase the chances of successful transactions.
3. Timeliness  
 The seller receives the payment more earlier, the than more conducive to the turnover of capitals.
4. Publically  
 The transaction certificate should be left during the transaction to make the transaction public and avoid disputes.

The concept of an electronic payment system was first proposed by Chaum (1983), which generally pointed out that the main participants in the system include three roles: the payer, the payee and the bank. Neuman (1995) pointed out, that the electronic payment system is divided into online credit card payment, electronic cash and debit electronic check depending on the payment tool used.

In addition, Ferreira and Dehab (1998) reported that, regard to the characteristics of electronic payment systems, they proposed the use of currency exchange models, the presence or absence of fair third parties, the amount of transactions, the hardware used in the system, the roles contained in the system, privacy, and currency availability Classification, etc., to classify electronic payment systems.

Asokan et al. (1997) pointed out that the information transmitted between transactions should be restricted to relevant participants. This also means that not everyone can easily observe the information between transactions. Abad et al. (1996) proposed that data can be divided into privacy and un-observability in terms of privacy.

This study refers to the relevant documents proposed by the above-mentioned scholars, and sorts out the common roles of electronic payment systems as follows:



1. Customers  
Called payer or buyer.
2. Merchant  
Called payee or seller
3. Buyer's bank  
Called Issuing bank or Issuer
4. Merchant's bank  
Called Acquirer bank or Acquirer
5. Arbitrer

This study is a practical research using MDS analysis technology, and it is aim to understand the degree of dispersion and aggregation of shopping Internet websites' cash-flow attributes and purchase amount groups.

### METHOD

This study used the Multidimensional Scaling technique.

Multidimensional Scaling (MDS) is applicable to many other areas where one is interested in visualizing the proximity of objects based on a set of indicators or proximities.

Multidimensional scaling (MDS) is a technique that creates a map displaying the relative positions of a number of objects, given only a table of the distances between them. The map may consist of one, two, three, or even more dimensions. The program calculates either the metric or the non-metric solution. The table of distances is known as the proximity matrix.

It arises either directly from experiments or indirectly as a correlation matrix. More technically, MDS refers to a set of related ordination techniques used in information visualization, in particular to display the information contained in a distance matrix. It is a form of non-linear dimensionality reduction.

In addition, this study was use the items about cash-flow as following:

1. I think online website will not abuse my personal information.
2. On this website, I can freely use private messages.
3. I think the adopt online transactions are safe.
4. I think it is safe to provide sensitive information in online transactions (ex: credit card number).
5. I think adopt the online trading risk is fell low.

And the age groups were divided the amounts of one item purchased by consumers on the Internet as were divided six groups:

CF1.  $\leq$  TWD500.

CF2. TWD 500-999.

CF3. TWD 1000-1999

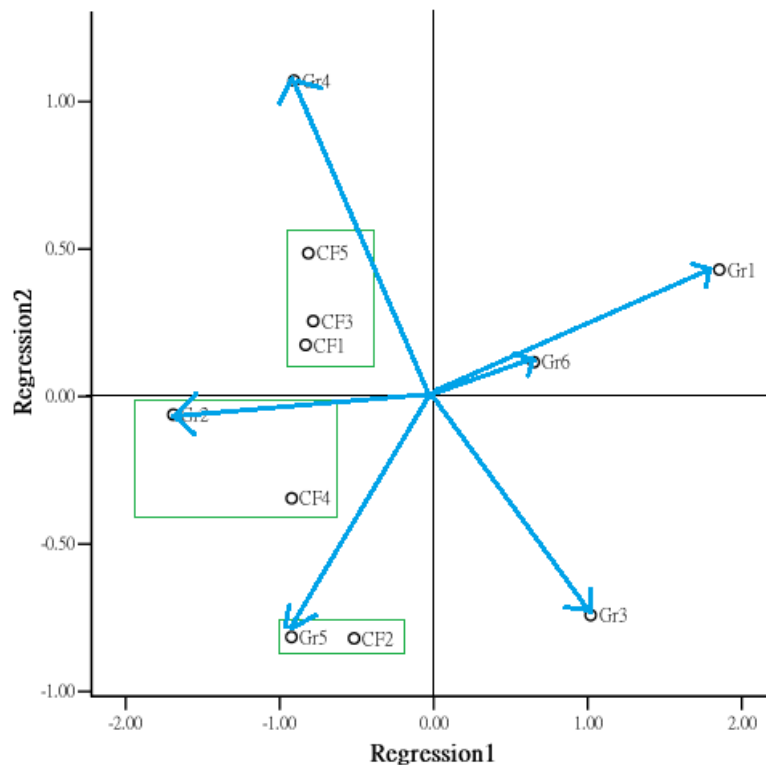
CF4. TWD 2000-2999

CF5. TWD 3000-3999

CF6.  $\geq$  4000

### RESULTS AND CONCLUSION

According to the analysis results, report that the CF5、CF3、and CF1 as the Figure 1, they were closely in the same quadrant and nearly each other. In the above, the Gr4 also in the quadrant, that present the amounts of one item purchased by consumers about TWD 2000-2999 on the Internet, they think the online website will not abuse my personal information, online transactions are safe, and trading risk is fell low.



**Figure 1 The cash-flow and the amounts of one item purchased by consumers on the website in MDS**

However, the Gr3 distance the CF5, is the most far, that present the amounts of one item purchased by consumers about TWD 3000-3999 on the Internet, the consumers of this group not necessarily so think adopt the online trading risk is fell low.

Besides, the Gr6 and Gr6 were distance the CF5, is also the most far, that present the amounts of one item purchased by consumers  $\geq 4000$  group on the Internet, the consumers can freely use private messages.

Thus, from the MDS analysis results, the amounts of one item purchased by consumers on the TWD 2000-2999 most concept the cash-flow attributes than others groups on the Internet website. The results of this research also remind the industry that consumers will not agree with the cash flow provided by the website if the amount of checkout on the website is too small or too much.

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