Book review

Acquisition pattern analysis with Mokken scales: Applications in the financial services market

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In my opinion, the purpose of reviewing a book is not only to summarise it but also to make a potential buyer want to read it. That is what I am trying to do here. First of all, it is a well written piece comprising five chapters which have, for the most part, already been published as papers. In fact this book is a dissertation, but it is easily readable by practitioners and students. It also clarifies some points, for the academics, on a relatively little-known technique — the application of Mokken scales in the field of financial services within a relational perspective. Numerous aspects of the use of these scales are developed in the book.

The first chapter introduces the subject. All the reasoning is originally grounded on the segmentation of consumer needs into generic group needs. That is, within a particular set of needs, the products the consumer holds are (a) functionally bundled and (b) not acquired at random. Consumer purchases follow a certain order which can be called an acquisition pattern. There are numerous sets of generic needs, for example, the ‘comfort set’, the ‘hygiene set’, the ‘entertainment set’ and so on.

Here, the purpose of Mokken scales analysis is to reveal combinations of products owned by consumers and the sequences in which these products are acquired. Acquisition pattern analysis also refers to a consumer’s lifecycle and knowledge of this pattern should encourage companies to offer appropriate products at the relevant period within the consumer lifecycle.

The author also specifies that, using these scales, it should be possible to describe consumer purchases of financial products at a higher level of granularity than at the level of a single acquisition. It should be noted that the financial services market is complex because of the existence of many and various products that have almost the same utility but are often labelled differently.

In order to carry out acquisition pattern analysis, the set of generic needs of concern must first be defined. This is done by observing which products are often owned in combination. The next stage is related to the properties of the well-known Guttman scale: for instance, to position both services and individuals along a latent trait that reflects not only the complexity of the service but also

the financial maturity of the customer. In brief, consumers are likely to acquire products first for satisfying more basic needs, more complex needs are satisfied later in the lifecycle. Furthermore, the position of one particular individual on this latent dimension can be interpreted as a function of a combination of personal characteristics such as socio-demographics, expertise and position within the lifecycle. Moreover, such analysis allows the gathering of information on longitudinal purchase patterns, from cross-sectional data collected through an ownership matrix. Consisting of one and zero, according to the possession or not of the item in question.

Chapter two is more specifically dedicated to this technique, which allows orders of subjects and events to be investigated using cross-sectional data. It is first remembered that longitudinal studies are costly and take a long time to carry out. Cross-sectional data are easier to obtain, but they can only be used for acquisition pattern analysis if the set of subjects contains individuals at each stage in the order of events and if the most common order in which events occur is stable over time.

Bias can occur if there is no strict hierarchical order through time for the various purchases, thus, when interpreting the results of acquisition pattern analysis, it is crucial to make an assumption about whether the patterns are the result of a hierarchy of needs or are a random phenomenon. In addition, even if the order of purchases can be deducted from such an analysis, nothing can be inferred with regards to inter-purchase spans.

Nevertheless, subjects are allocated positions in the order using the number of events passed — just as for a Guttman scale. Similarly, events or purchases are ordered by using the number of subjects

that experience bought them. While Guttman scales are deterministic — that is to say they assume that every subject who answers an item positively will answer all less difficult items positively also — Mokken scales are probabilistic; that is, a respondent answering an item positively will have a significantly greater probability than zero of answering a less difficult item in a positive way as well. In other words, other latent classes may occur when individuals give non-conventional answers to some items. Analysis of Mokken scales results in item characteristic curves (ICCs, also called trace lines), which can take various forms. The form they take determines the extent to which hierarchical assumptions can be made. Parallel ICCs imply that individuals and items can be ordered on an interval scale. This assumption is seldom met because the definition is too strict. For the purpose of acquisition pattern analysis, an ordinal scale seems to be sufficiently adequate.

Chapter three is related to specific applications of Mokken scales for acquisition pattern analysis. First, the notion of contingencies is presented as a limitation on the use of such analyses. In cases where the ownership matrix results from purchases caused by functionally tied necessities — for example, ‘the purchase of a car leading to the purchase of new tyres at some point in the future — could lead to problems.’ The researcher’s perspicacity should avoid such a problem!

Next, specifications are given for the model and the technical elements are revealed (this should really have been done in the previous chapter). Mokken scale analysis is developed at last! It is shown that two models are eligible for interpreting ICCs: monotone homogeneity (MH) and double monotony (DM). For the first, the curve of the probability of a positive response

to an item should increase monotonically as the latent trait increases along the x-axis, (the y-axis being the probability). Double monotony should not exist: that is, the curves relating to items in a scale should not intersect. Loewinger's coefficient of homogeneity is used in order to assess the fit of the model to the data. This coefficient shows to what extent ownership of a product set is unique to a generic need.

The author then demonstrates some application examples in durables and financial products. While not wishing to be critical, some of these outcomes could be seen as ordinary. More interesting is a pan-European study about products facilitating financial transactions. Mokken scales analysis makes the possible elaboration of a hierarchy in the acquisition of transactional products possible. Some differences are found across the different countries. Here, one can really wonder if this hierarchy results from the particular consumers' needs, or from the national structure of financial services. It would have been more interesting if a substantial discussion had taken place here. Nevertheless, the managerial implications are of great importance because of the possibility of predicting product acquisitions over time.

Chapter four analyses the predictive power of the model for real life behaviour. For this purpose, the author investigates whether characteristic sets-related information predicts consumer responses to a commercial direct mail programme. The first step consists of clustering customers through characteristic sets compiled from a transactional database and of interpreting the validity of resulting scales by

avoiding contingencies and substitutability. Secondly, within each cluster defined in this way, RFM (recency, frequency and monetary variables) are used to select the customers who have to be solicited.

The first stage highlights two characteristic sets: one of them is related to products for saving money, the other to products for lending money. The research design deals with a comparison between response rates to a mailing carried out either by using overall RFM variables or characteristic sets-specific RFM variables. Globally, better results are obtained using the latter information. Equally, this information would be very useful for cross-selling purposes.

Lastly, chapter five draws conclusions on the whole work and presents managerial implications, then limitations and further research are exposed.

To conclude briefly, this book is first and foremost of a technical nature. It has few contributions on theoretical approaches, but it presents the advantages of outlining the operability of Mokken scales, both for practitioners and for researchers. It should also be noted, that within the framework of marketing studies, this 'granularity' level is seldom employed. Without any doubt, acquisition pattern analysis should be considered more often by marketers in support of other means of market analysis and structuralisation. That said, I really enjoyed reading this book, which should be part of each market (or database) analyst's library.

Professor Dominique Crié
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