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Volume Title: Risk Elements in Consumer Instalment Financing, Technical Edition

Volume Author/Editor: David Durand

Volume Publisher: NBER

Volume ISBN:

Volume URL: http://www.nber.org/books/dura41-1

Publication Date: 1941

Chapter Title: Index

Chapter Authors: David Durand

Chapter URL: http://www.nber.org/chapters/c12954

Chapter pages in book: (159 - 163)

Where n' and n" are only approximately equal, this second formula is still useful. If a significant value of  $\chi^2$  is obtained when the smaller of the two n's is substituted, the true  $\chi^2$  is obviously greater and also significant; and if a non-significant value is obtained with the larger of the two n's, the true value is also non-significant. An example may prove enlightening. The following is the percentage distribution of loans by sex and marital status in the sample submitted by one bank:

	Single Females	Single Males	Married Females	Married Males	Others
150 Good loans	30.0	9.3	12.7	40.7	7.3
100 Bad loans	5.0	24.0	2.0	59.0	10.0

In the first class the quantity  $\frac{(30.0-5.0)^2}{(30.0+5.0)}$  is 17.86; the sum of this and four similar quantities for the other four classes is 35.89.<sup>12</sup> If we substitute 100, the smaller of the two n's, we still have 35.89, which is an underestimate of the true  $\chi^2$ . Since the 1 percent value of  $\chi^2$  is only 13.28, 35.89 is clearly significant. Since the contribution of the first class to the total  $\chi^2$ , 17.86, is itself greater than the 1 percent value of 13.28, the significance can be demonstrated from the first class alone, and additional computation is unnecessary.

## Index

AGE OF BORROWER—4, 74.

APPLICATIONS FOR LOANS—Data Provided by 15, 20.

Assets of Borrower—3, 62-65, 79-81,

Assets of Borrower—3, 62-65, 79-81, 132.\*

BAD LOAN RELATIVE (INDEX OF BAD-LOAN EXPERIENCE)—27-28, 95-96; Sampling Error of 9-10, 36, 95-96, 154-57.\*

Bôcher, M.-114n.\*

Borrowers of Consumer Instal-MENT LENDING INSTITUTIONS—Financial Characteristics of 2-5, 14-19, 45-65; Fundamental Requirements of 14-15; Geographical Distribution of 12; Income of, See Income; Non-Financial Characteristics of 2-4, 65-77; Vocational Composition of 12. Bose, R. C.—113.\* 150.\* 150n.\*

Cash Price of Article Purchased—4, 57-58, 80, 127-30.\*

CHAPMAN, JOHN M.—17n, 38n, 40n, 44n, 50n, 56n, 57n, 63n, 77n.
CHI-SQUARE TEST—26n, 145-46,\* 157-

58.\*

COLLATERAL FOR LOAN—10-11, 56-57.
CONSUMER INSTALMENT CREDIT—See
Credit.

CONTRACT—Length of Loan Contract 53-56, 79-80, 127-30.\*
COON, OWEN L.—83n.

COPPOCK, JOSEPH D.—48n.

CORRELATION—Effect of on Analysis 53, 85-90, 115-16,\* 128-29,\* 131-41.\*

Costs of Consumer Instalment Financing Business—Study of 94-99.

CREDIT—Characteristics of Consumer Instalment Credit 10-13; Classification of Transactions 11.

CREDIT ANALYSIS—Value of 99-101.

CREDIT FACTORS—Evaluation of 1-2, 6-7, 15-19, 90-91.

CREDIT INVESTIGATION—1, 9, 14.

CREDIT POLICY—Revision of 93-94; Social Implications of 8, 100-1. CREDIT-RATING FORMULAE—7, 83-91.

125-42.\*
CREDIT RISK—And Borrower's Financial Characteristics 2-5, 45-65; And Borrower's Non-Financial Charac-

teristics 2-4, 65-77; Fundamentals of Risk Selection 1-2, 14-15; Method of Analyzing Risk Factors 22-43; Time Element as Cause of Variation in Risk Experience 40-41.

CREDIT TRANSACTIONS — Classification of 11.

DEPENDENTS OF BORROWER—4, 74, 77. DOWN PAYMENT—4, 59-62, 79-81, 127-30.\*

DUNHAM, H. L.—83n.

Efficiency Index—5-6, 28-31, 107-8;\*
Sampling Error of 153-54.\*

EMPLOYMENT OF BORROWER—Nature of 3-4, 69-74, 80-81, 132;\* Stability of 2, 3, 23-26, 65-67, 80, 132.\*

EVALUATION OF CREDIT FACTORS—See Credit Factors.

Financial Characteristics of Borrowers—2-5, 14-19, 45-65.

FISHER, R. A.—24n, 26n, 33n, 111,\* 111n,\* 149,\* 149n.\*

FORMULAE, CREDIT-RATING—7, 83-91, 125-42.\*

Fundamentals of Risk Selection—1-2, 14-15.

Funds—Use of Funds Borrowed, As Risk Factor 4, 77-78.

GEARY, R. C.—151,\* 152n.\* GREENBERG, JOSEPH M.—83n.

 $<sup>^{12}</sup>$  With the aid of a table of squares and a calculating machine, the calculation of  $\chi^2$  by this process is reasonably easy.

<sup>\*</sup> This reference applies to technical edition.

HOTELLING, HAROLD—146,\* 146n.\* HSU, P. L.—150,\* 150n.\*

Income—Distribution of Borrower's 12-13; Of Borrower, As Credit Factor 2, 4-5, 14, 45-48, 80-81, 127-30.\* Industrial Classification of Borrowers—4, 73-74.

KENDALL, M. G.-24n.

Length of Loan Contract—53-56, 79-80, 127-30.\*

LIABILITIES OF BORROWER-65.

Loans—Amount of Loan, as Risk Factor 48-53, 80-81, 127;\* Bad, Characteristics of 22; Bad-Loan Experience, Index of 9-10, 27-28, 36, 95-96, 154-57;\* Consumer Instalment Loans, Characteristics of 10-11; Contract Length, as Risk Factor, 53-56, 79-80, 127-30;\* Data Provided by Loan Applications 15, 20; Good, Characteristics of 22; Purpose of, as Risk Factor 4, 77-78; Security of, as Risk Factor 10-11, 56-57.

Marital Status of Borrower—4, 74-75, 80.

MATURITY OF LOANS—53-56, 79-80, 127-30.\*

MILLS, FREDERICK C.—26n.

Non-Financial Characteristics of Borrower—2-4, 65-77, 77.

OCCUPATION OF BORROWER—See Employment.

Personal Finance Transactions—Characteristics of 11-12.

PLUMMER, WILBUR C.—18n, 55n, 84n.

RANDOM SAMPLING TECHNIQUE—32-34. RECOURSE COMPANY—52n.
RESIDENCE, STABILITY OF—3, 67-69, 80-81, 132,\* 142.\*
RISK, CREDIT—See CREDIT RISK.
ROY, S. N.—113,\* 150,\* 150n.\*

Sales Finance Transactions—Characteristics of 11-12.
Sample Analysis—22-43.

Sampling Procedure—Analysis Based on Samples of Equal Size 31-32; Consideration of Time Element 40-41; Consolidation of Samples 37-38; Equal Sample Method, Purpose of 31-32; Random Sampling Technique 32-34; Selection of Samples 31-32; Size of Sample 34-37. Saulnier, Raymond I.—40n, 44n,

50n, 56n, 77n.

SECURITY OF LOAN—10-11, 56-57. SEX OF BORROWER—4, 74-75, 80-81, 132.\*

SNEDECOR, GEORGE W.—24n, 26n.
STATISTICAL SIGNIFICANCE. TESTS OF-

STATISTICAL SIGNIFICANCE, TESTS OF—24n, 26n, 145-58.\*

t-Test—24n, 146-50;\* Generalized 146-50.\*

TANG, P. C.—150, 150n.\* TIPPETS, L. H. C.—33n.

Vocational Composition of Borrowers—12.

YATES, F.—33n. YOUNG, RALPH A.—18n, 55n, 84n. YULE, G. UDNEY—24n.

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