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**THE DEVELOPMENT AND VALIDATION OF
HRIS IMPLEMENTATION SCALE**



**DOCTOR OF PHILOSOPHY
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January 2020**

**THE DEVELOPMENT AND VALIDATION OF
HRIS IMPLEMENTATION SCALE**

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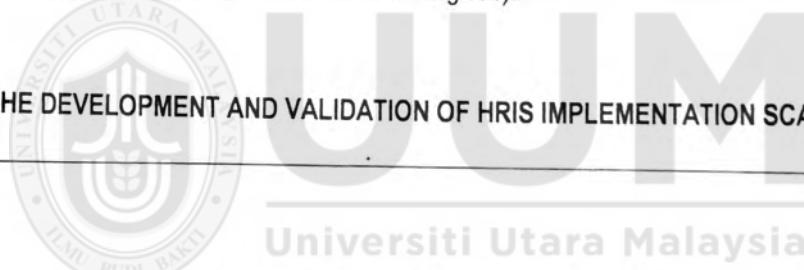
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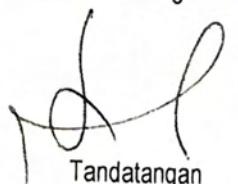
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ABSTRACT

Computerized human resource information systems (HRIS) is an innovation in human resource management (HRM) that has been adopted by many organizations to increase HRM effectiveness and enhance organizational communication. However, in Pakistan, the adoption of HRIS is still rather limited. In order to understand the issue of HRIS adoption, the Diffusion of Innovation (DOI) theory explains the process of innovation adoption. Nevertheless, most of the previous studies conducted on HRIS adoption stopped at the decision stage (third stage) of the adoption process, whereby a dichotomous scale of 'yes' and 'No' was used. Organizations could not get the benefits of HRIS at the decision stage; hence HRIS adoption should be measured at the implementation stage (fourth stage). Unfortunately, previous studies have not studied HRIS adoption at the implementation stage and thus, a scale for measuring HRIS adoption at the implementation stage has to be developed. Using a qualitative research method, the first phase of this study developed a new scale of HRIS adoption at the implementation stage. The qualitative data were collected in July, August, and September of 2016. Data was collected through interviews from the experts of IS and HR in Pakistan. The new scale is unidimensional with ten items. The second phase applied a quantitative research method to test and validate the scale and at the same time, examine the research framework which was established based on the theory of DOI and technology-organization-environment (TOE) framework. Second phase mainly tested the relationship between technological (IT infrastructure, IT expertise), organizational (Top management support, HRM practices, financial readiness), environmental (competitive pressure) factors and HRIS implementation. The data were collected from listed organizations in Pakistan Stock Exchange (PSX). A total of 250 questionnaires were distributed, to HR managers of the organizations, using a systematic random sampling technique and 173 were returned. This study used SPSS V23 and smart PLS 3 for data analysis. This study found IT infrastructure, IT expertise, financial readiness, and top management support (TMS) have a significant positive effect on HRIS adoption. On the other hand, HR practices and competitive pressure have no significant effect on HRIS implementation. The overall reliability of HRIS implementation as measured using Cronbach's alpha was 0.92. This study provides a few theoretical and practical contributions. First, how to measure HRIS implementation in organizations. The main contribution of this study is the development of HRIS implementations scale. It can be used by researchers to examine relationships with other important factors, explained by TOE framework, that can affect the implementation of HRIS in the organizations. This scale will also provide the bases for researchers in other IS based studies at implementation stage.

Keywords: Adoption of HRIS, Diffusion of Innovation, Technological Organizational Environmental factors, Top Management support.

ABSTRAK

Sistem maklumat sumber manusia (HRIS) berkomputer merupakan satu inovasi dalam pengurusan sumber manusia (HRM) yang telah digunakan oleh banyak organisasi untuk meningkatkan keberkesanan HRM dan menambah komunikasi organisasi. Bagi memahami isu penggunaan HRIS ini, teori Penyebaran Inovasi (DOI) menerangkan proses penggunaan inovasi. Namun begitu, kebanyakannya kajian lepas yang dijalankan ke atas penggunaan HRIS mengukur tahap keputusan (tahap ketiga) proses penggunaan, di mana skala *dichotomous* ‘ya’ dan ‘tidak’ telah digunakan. Namun, organisasi tidak akan mendapat kebaikan HRIS pada tahap keputusan, maka penggunaan HRIS seharusnya diukur pada tahap implementasi (tahap keempat). Malangnya, kajian lepas tidak mengkaji penggunaan HRIS pada tahap implementasi, dengan itu skala untuk mengukur penggunaan HRIS pada tahap implementasi perlu dibangunkan. Dengan menggunakan kaedah kajian kualitatif, fasa pertama kajian ini membangunkan skala baru penggunaan HRIS pada tahap implementasi. Data kualitatif telah dikumpulkan pada bulan Julai, Ogos dan September 2016. Data tersebut dikumpulkan melalui temubual dengan pakar bidang sistem maklumat dan sumber manusia di Pakistan. Skala baru yang dibentuk adalah unidimensi dengan sepuluh butiran. Fasa kedua mengaplikasi kaedah kajian kuantitatif untuk menguji dan mengesahkan skala dengan menguji kerangka kajian yang dibentuk berdasarkan teori DOI dan kerangka teknologi-organisasi-persekutaran (TOE). Khususnya kajian ini menguji hubungan antara faktor-faktor teknologi (infrastruktur IT, kepakaran IT), organisasi (sokongan pengurusan atasan, amalan HRM, kesediaan kewangan), persekitaran (tekanan persaingan) dan penggunaan HRIS. Data dikumpulkan daripada organisasi yang tersenarai di Pakistan Stock Exchange (PSX). Sejumlah 250 soal selidik telah diedarkan menggunakan kaedah persampelan rawak dan 173 telah dikembalikan. Kajian ini menggunakan SPSS V23 dan SmartPLS 3 untuk menganalisis data. Kajian mendapati infrastruktur IT, kepakaran IT, kesediaan kewangan, dan sokongan pengurusan atasan mempunyai kesan yang signifikan ke atas penggunaan HRIS. Manakala, amalan HRM dan tekanan persaingan tidak mempunyai kesan yang signifikan ke atas penggunaan HRIS. Pembolehubah penyederhana TMS memberi kesan yang positif dan signifikan ke atas hubungan antara amalan HRM dan

penggunaan HRIS, dan tekanan persaingan dan penggunaan HRIS. Kebolehpercayaan keseluruhannya, diukur menggunakan *Cronbach's alpha*, adalah 0.92. Sumbangan utama kajian ini adalah pembentukan skala pelaksanaan HRIS. Skala ini boleh digunakan oleh pengkaji untuk mengukur pelaksanaan HRIS dalam organisasi dan menguji faktor yang mempengaruhi pelaksanaan HRIS dalam organisasi. Skala ini juga boleh dijadikan asas untuk kajian lain-lain sistem maklumat pada tahap pelaksanaan

Kata kunci: penggunaan HRIS, teori penyebaran inovasi, kerangka teknologi organisasi persekitaran, skala pelaksanaan HRIS, pembangunan skala.



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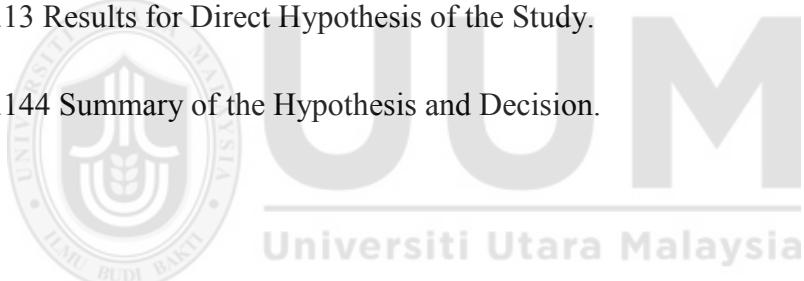
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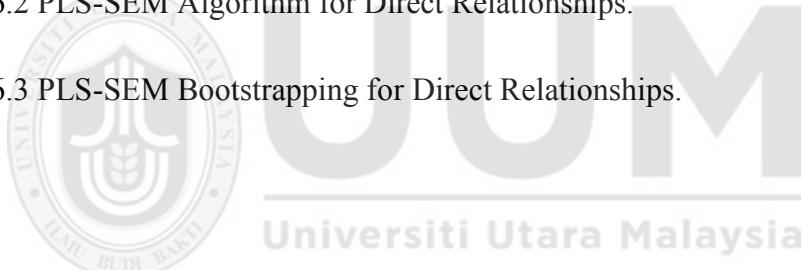
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LIST OF ABBREVIATIONS

CPU	Central Processing Unit
CMV	Common Method Variance
DBMS	Data Base Management System
DOI	Diffusion of Innovation (Theory)
EFA	Exploratory Factor Analysis
HRIS	Human Resource Information System
HRM	Human Resource Management
IT	Information Technology
MIS	Management Information System
PLS	Partial Least Squares
PSX	Pakistan Stock Exchange
SEM	Structural Equation Model
SPSS	Statistical Package for Social Science
TMS	Top Management Support
TOE	Technology Organization Environment (framework)
UUM	Universiti Utara Malaysia
VHRM	Virtual Human Resource Management

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter has discussed the background of the study. Further, it presented the problem statement, which becomes the base of the research objectives and research questions. This is followed by the scope of the study and its significance. Also presented, the definition of key terms. This chapter ends with the organization of chapters in the thesis.

1.2 Background of the Study

Every business organization has heaps of data, which is the lifeblood of today's organization. One of the most important data is the worker's data, and the human resources (HR) division is the custodian of worker's data. The kind of data collected, where the data is deposited, how the data is used, and the type of arrangements made for these purposes has transformed over time, but the necessity to collect data, relating to employment, promotion, and termination of workers, has not altered. The biggest challenge, business organizations are facing is to manage data and to infer information from that data effectively and efficiently. Nawaz, (2013), state that HRIS could create informational efficiencies and cost saving for organizations. This is because using HRIS, HR departments can provide better analysis of current data and creative uses of the HRIS to provide better and more accurate information upon which the strategic decisions could be made.

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APPENDIX - A

Interview Recording Sheet Round One interviews

Date: _____

Start Time: _____ End Time: _____

Participant Name: _____

Participant Type: Academician Practitioner Developer

Questions to be asked.

Main Question

- What is HRIS, and how you will define it?
- What is meant by HRIS implementation in an organization?

Probe Questions.

- Who are the beneficiaries of this system?
- Is it necessary to integrate all of the HRIS applications and why?
- How is the integration of HRIS applications possible?
- If any organization is using one, two or a few stand-alone applications for their HR, can we say they have implemented HRIS? Why?

Notes:



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Instructions for Interviewer

- Interview is a formal session.
- Introduce yourself and the purpose of the session.
- Ask participants to introduce a little bit about their education and experience in the field.
- Ask a question in a polite and knowledge-seeking manner.
- Do not try to force your opinion or understanding of the participant.
- Listen to the participant carefully.
- In case of any unclear statement from the participant, probe them with few more questions for clarity.
- Note down each theme clearly with its description.
- If the participant missed any theme (discussed with the previous participant), probe a few questions about that theme.
- Once the participant answers all the questions, repeat the major points of the discussion.
- Repeat what you understand from the participant about every theme, to verify.
- End interview with Thanks Note.

Instructions read to participants before the session.

Please share whatever you think is appropriate and concerned with our topic under discussion. Your response may be reported but anonymously. Personal information like name and organizational name will not be disclosed. Your educational and professional experience will be displayed but anonymously.

Thank you Note.

I am very thankful to you, for your time and for sharing information with me. Your insight into HRIS implementation is a great source of knowledge. As a token of memory, from you side, I have your interview and from my side here is a small gift for you.

APPENDIX - B

Interview Recording Sheet Round Two of interviews

Date: _____

Start Time: _____ End Time: _____

Participant Name: _____

Participant Type: Academician Practitioner Developer

Questions to be asked.

Main Question

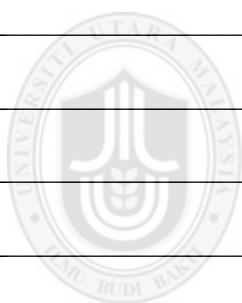
- What could be the questions asked from an organizational representative that could be used to measure the HRIS implementation in that organization?
- Who could be the organizational representative to answer those questions?

Probe Questions.

After providing the list of previously generated items.

- Do you think these items are appropriate for measuring HRIS implementation?
- What else could be added with these questions/items?
- What are the HR applications used in the organizations?

Notes:



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Instructions for Interviewer

- The interview is a formal session.
- Introduce yourself and the purpose of the session.
- Ask participants to introduce a little bit about their education and experience in the field.
- Ask a question in a polite and knowledge-seeking manner.
- Do not try to force your opinion or understanding of the participant.
- Listen to the participant carefully.
- In case of unclear statements from the participant, probe them with a few more questions for clarity.
- Note down each answer clearly with its description (where necessary).
- If the participant missed any measure/item (discussed with the previous participant), probe a few questions about that.
- Once the participant answers all the questions, repeat the major points of the discussion.
- Repeat what you understand from the participant about items, to verify.
- End interview with Thanks Note.

Instructions read to participants before the session.

Please share whatever you think is appropriate and concerned with our topic under discussion. Your individual response may be reported but anonymously. Personal information like name and organizational name will not be disclosed. Your educational and professional experience will be displayed but anonymously.

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Thank you Note.

I am very thankful to you, for your time and for sharing information with me. Your insight into HRIS implementation is a great source of knowledge. As a token of memory, from your side, I have your interview and from my side here is a small gift for you.

APPENDIX - C

Name: _____ Date: _____

First of all thank you for your time.

Note: This newly developed scale, comprising of two sections. The objective of this newly developed scale is to measure the level of HRIS implementation in organizations. These questions will be asked to HR managers who have implemented HRIS in their organizations.

Definition of HRIS implementation: For this study, HRIS implementation is conceptualized as “using a computerized and integrated human resource management system in the organization (comprised of applications, such as payroll administration, attendance, HR planning, performance appraisal, benefits and compensation management, recruitment and selection and employee data, etc.) to acquire, store, manipulate, analyze, retrieve and distribute relevant information related to organization's human resource, applicants and former employees for performing HR activities and for HRM-related decision making at all three levels of management.”

You are requested to evaluate the newly developed scale on five points.

1. Not at all representative.
2. Doubtful representative.
3. Somewhat representative.
4. Clearly representative.
5. Completely representative.

- Do you think the two sections mentioned (on next two pages) are enough to measure the HRIS implementation in any organization? Or we need to ask some more questions (in case of YES), what could be those questions?

Please key in your response here (from 'Not at all' to 'Completely representative' scale) for each section mentioned in newly developed scale attached with this sheet...

Section 1 (Usage of the system)

HR Applications	Not at all Representative		Completely Representative		
	1	2	3	4	5
Recruitment/selection					
Employee record-keeping					
Time and attendance management					
Leave and Settlements					
Payroll service					
Benefits management					
Training & development					
Promotion and performance appraisal					
Turnover tracking/job analysis					
Retirement and compensation management					
Internal and external communication					
HR Succession planning					

Section 2 (implementation of system)

	Not at all representative				Clearly representative
	1	2	3	4	5
Q1					
Q2					
Q3					
Q4					
Q5					
Q6					
Q7					
Q8					
Q9					
Q10					
Q11					
Q12					

Please rephrase where needed, to clarify any ambiguous statement, in this questionnaire.

No.	New Items Generated for HRIS implementation Scale.
Q1	Our organization is using a computerized system to perform HR activities.
Q2	Our organization is using integrated HRIS.
Q3	Integrated HRIS enables us to accomplish a task more quickly.
Q4	In our organization, our HR personal uses the HRIS system to key in the employees' related data.
Q5	Our organization use HRIS to interconnect with employees.
Q6	Our organization produce various reports through our HRIS.
Q7	Our HRIS provide valuable information for decision making
Q8	Our top management is making strategic decisions with the help of our HRIS.
Q9	Our organization gain benefits from the use of HRIS.
Q10	Employee related communication and information is shared with the employees through HRIS.
Q11	Using HRIS, we share information among relevant departments.
Q12	All of our HR-related data is stored in HRIS.

APPENDIX - D



Respected Head of HR,

The purpose of the attached survey is to understand the role of Technological, Organizational, and environmental factors in the implementation of HRIS in the business organizations of Pakistan. There are some statements given in this survey which you are requested to answer. This questionnaire is designed to assess your perception of your organization's practices and the extent to which HRIS is implemented. There are no right or wrong answers in this survey. All your answers will reflect your personal opinion about the current organizational practices.

Individual responses to this survey will be kept **CONFIDENTIAL** and will **NOT** be disclosed. Your institution will NOT have access to the information you have provided herein. **No reference** will be made in written or oral materials that could link you to this study. **Only grouped data will be reported in the results.**

Universiti Utara Malaysia

Please read carefully the instruction at the beginning of each section, and answer all the statements as accurately as possible. Your time and cooperation will be an addition to knowledge and will be greatly appreciated. Please take a few minutes to fill out this survey questionnaire.

Thank you in advance for taking the time to complete this survey.

Yours faithfully,

Muhammad Farooq Tariq Butt

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INSTRUCTIONS: Please read the following statements and indicate the extent of your agreement with the statements on a 5-point scale. **Please tick your answer choice.**

1 = Strongly Disagree (SD) | 2 = Disagree (D) | 3 = Neutral (N) | 4 = Agree (A) | 5 = Strongly Agree (SA)

IT Infrastructure		1	2	3	4	5
1	Our organization has sufficient experience with network-based applications.					
2	Our organization has sufficient business resources to implement HRIS.					
3	Our organization is well computerized with LAN and WAN.					
4	Our organization has bandwidth connectivity to the Internet.					
5	Our existing information systems are flexible.					

IT Expertise		1	2	3	4	5
1	All human resources personal are computer-literate.					
2	There is at least one employee in the HR department who is computer literate.					
3	Human resources personnel's understanding of computers is very good compared with other organizations in the same industry.					

Financial readiness		1	2	3	4	5
1	Our organization is ready to pay the high set-up cost for HRIS.					
2	Our organization is ready to pay the high running cost for HRIS.					
3	Our organization is ready to pay the high training cost for HRIS.					

HR Practices		1	2	3	4	5
1	Applicants undergo structured interviews or formal test before being hired.					
2	Qualified employees have the opportunity to be promoted to positions of greater pay and/or responsibility within the organization.					
3	Employees receive proper training to perform tasks.					
4	Employees regularly (at least once a year) receive a formal evaluation of their performance.					
5	Pay raises for employees depends based on job performance.					
6	Employees have the opportunity to earn bonuses (or compensations) for collective/individual performance outcomes.					
7	Employees are involved in formal participation processes such as quality improvement groups, problem-solving groups, roundtable discussions, or suggestion systems.					
8	Employees have a reasonable and fair complaint process.					
9	HR department manages the payroll.					

Competitive pressure		1	2	3	4	5
1	Competitor's adoption of HRIS places pressure on our organization to adopt HRIS					
2	Many of our competitors are currently adopting HRIS.					
3	Many of our competitors will be adopting HRIS in the near future.					
4	Our key competitors are currently adopting HRIS.					

Top management support		1	2	3	4	5
1	Top management enthusiastically supports the adoption of HRIS.					
2	Top management has allocated adequate resources for the adoption of HRIS.					
3	Top management is aware of the benefits of HRIS.					
4	Top management actively encourages HR personnel to use HRIS in their daily tasks					

HRIS implementation		1	2	3	4	5
1	Our organization is using a computerized system to perform HR activities.					
2	In our organization, all HRIS applications /modules are integrated with each other.					
3	Integrated HRIS enables our organization to accomplish a task more quickly.					
4	In our organization, our HR personnel uses the HRIS system to key in the employees' related data.					
5	Our organization produce various reports through our HRIS.					
6	Our HRIS provide valuable information to our managers for decision making.					
7	Our top management is making strategic decisions with the help of our HRIS.					
8	In our organization employee-related information is shared with the employees through HRIS.					
9	Using HRIS, we share information among relevant departments of our organization.					
10	In our organization, all of our HR-related data is stored in HRIS.					

Demographic variables:

Instructions: Please **TICK** (✓) in the appropriate box that is suitable to you. All information received on this form will only be used for the purpose of academic research and **will be strictly held in confidentiality**.

The number of employees in organization:

1 – 50	51 – 100	
100 – 250	More than 250	

Number of year organization in business,

1 – 5	6 – 10	
11 – 15	More than 15 year	

The sector of organization:

Manufacturing		Service	
---------------	--	---------	--

Number of employees in HR department,

1 – 5	6 – 10	
11 – 15	More than 15	

The number of IT employees in your organization:

1 – 5	6 – 10	
11 – 15	More than 15	

Gender:

Male		Female	
------	--	--------	--

Your Age:

Less than 30 year		30 - 40 year	
41 to 50 year		More than 50 year	

Your years of experience:

1 – 5 years		6 - 10 years	
11 – 15 year		More than 15 year	

Your highest qualification attained:

Graduation or equivalent	
Master or equivalent	
PhD or equivalent	

		Usage up to what level.				
		Not at all	Very little	Some what	Significant amount	Great extent
Applications of HRIS						
1	Recruitment/selection					
2	Employee record-keeping					
3	Time and attendance management					
4	Leave and Settlements					
5	Payroll service					
6	Benefits management					
7	Training & development					
8	Promotion and performance appraisal					
9	Turnover tracking/job analysis					
10	Retirement and compensation management					
11	Internal and external communication					
12	HR Succession planning					

APPENDIX – E

LIST OF COMPANIES LISTED AT PAKISTAN STOCK EXCHANGE (PSX):

Total listed companies = 580
 Total sectors in which listed = 35

Sr. NO	Company Name	Sr. NO	Company Name	Sr. NO	Company Name
1	Abbot Laboatoires (Pakistan) Limited	195	First National Equities Limited	388	Packages Limited
2	Abdullah Shah Ghazi Sugar Mills Limited	196	First Pakistan Modarba	389	Pak Datacom Limited
3	Abson Industries Limited	197	First Paramount Modaraba	390	Pak Elektron Limited
4	Adam Sugar Mills Limited	198	First Prudential Modarba	391	Pak Elektron(Pref)
5	Adamjee Insurance Company Limited	199	First Punjab Modarba	392	Pak Gulf Leasing Company Limited
6	Adil Textile Mills Limited	200	First Treet Manufacturing Modarba	393	Pak Leather Crafts Limited
7	Ados Pakistan Limited	201	First Tri-Star Modarba	394	Pak Oman Advantage Fund
8	Agriautos Industries Limited	202	First UDL Modarba	395	Pak Suzuki Motor Company Limited
9	Agritech Limited	203	Flying Cement Company Limited	396	Pakcem Limited
10	Agitech Limited Non-voting Class (Pref Shares)	204	Frontier Ceramics Limited	397	PAKGEN Power Limited
11	Ahmed Hassan Textile Mills Limited	205	Gadoon Textile Mills Limited	398	Pakistan Cables Limited
12	Aisha Steel Mills Limited	206	Gammon Pakistan Limited	399	Pakistan Engineering Company Limited
13	Aisha Steel Mills Limited (Preference Shares)	207	Gatron Industries Limited	400	Pakistan General Insurance Company Limited
14	Aisha Steel Mills Ltd(Con.Cum.Pref.Share)	208	General Tyre and Rubber Co. of Pakistan Limited	401	Pakistan Guarantee Insurance Company Limited
15	AKD Capital Limited	209	Genertech Pakistan Limited	402	Pakistan Gum and Chemiclas Limited
16	Akzo Nobel Pakistan Limited	210	Ghandara Nissan Limited	403	Pakistan Hotels Developers Limited
17	Al-Abbas Sugar Mills Limited	211	Ghandhara Industries Limited	404	Pakistan Industrial and Commercial Leasing Limited

18	Al-Abid Silk Mills Limited	212	Ghani Automobile Industries Limited	405	Pakistan International Airlines Corporation
19	Al-Azhar Textile Mills Limited	213	Ghani Gases Limited	406	Pakistan International Airlines Corporation (B Class Shares)
20	Al-Ghazi Tractors Limited	214	Ghani Glass Limited	407	Pakistan International Bulk Terminal Limited
21	Ali Asghar Textile Mills Limited	215	Ghani Global Glass Limited	408	Pakistan International Container Terminal Limited
22	Al-Khair Gadoon Limited	216	Ghani Value Glass Limited	409	Pakistan National Shipping Corporation Limited
23	Allawasaya Textile & Weaving Mills Limited	217	Gharibwal Cement Limited	410	Pakistan Oilfields Limited
24	Allied Bank Limited	218	Ghazi Fabrics International Limited	411	Pakistan Paper Products Limited
25	Allied Rental Modarba	219	Gillette Pakistan Limited	412	Pakistan Petroleum Limited
26	Al-Mal Securities & Services Limited	220	Glamour Textile Mills Limited	413	Pakistan PVC Limited
27	Al-Noor Sugar Mills Limited	221	GlaxoSmithKline (Pakistan) Limited	414	Pakistan Refinery Limited
28	Al-Qadir Textile Mills Limited	222	Globe (OE) Textile Mills Limited	415	Pakistan Reinsurance Company Limited
29	Al-Qaim Textile Mills Limited	223	Globe Textile Mills Limited	416	Pakistan Services Limited
30	Al-Shaheer Corporation Limited	224	Golden Arrow Selected Funds Limited	417	Pakistan State Oil Company Limited
31	Altern Energy Limited	225	Goodluck Industries Limited	418	Pakistan Synthetics Limited
32	Amreli Steels Ltd.	226	Grays Leasing Limited	419	Pakistan Telecommunication Company Limited
33	Amtex Limited	227	Grays Of Cambridge (Pakistan) Limited	420	Pakistan Tobacco Company Limited
34	Annoor Textile Mills Limited	228	Gul Ahmed Textile Mills Limited	421	Pangrio Sugar Mills Limited
35	Ansari Sugar Mills Limtied	229	Gul Ahmed Textile Mills Ltd.(R)	422	Paramount Spinning Mills Limited
36	Apna Microfinance Bank Limited	230	Gulistan Spinning Mills Limited	423	Pervez Ahmed Securities Limited
37	Apollo Textile Mills Limited	231	Gulistan Textile Mills Limited	424	Philip Morris (Pakistan) Limited
38	Archroma Pakistan Limited	232	Gulshan Spinning Mills Limited	425	PICIC Growth Fund
39	Arif Habib Corporation Limited	233	Habib Bank Limited	426	PICIC Insurance Limited
40	Arif Habib Limited	234	Habib Insurance Company Limited	427	PICIC Investment Fund
41	Arpak International Investment Limited	235	Habib Metropolitan Bank Limited	428	Pioneer Cement Limited

42	Arshad Energy Limited	236	Habib Sugar Mills Limited	429	Popular Islamic Modaraba
43	Artistic Denim Mills Limited	237	Habib-ADM Limited	430	Power Cement Limited
44	Aruj Industries Limited	238	Hafiz Limited	431	Premier Insurance Limited
45	Ashfaq Textile Mills Limited	239	Haji Mohammed Ismail Mills Limited	432	Premier Sugar Mills and Distillery Company Limited
46	Asia Insurance Company Limited	240	Hajra Textile Mills Limited	433	Premium Textile Mills Limited
47	Asim Textile Mills Limited	241	Hakkim Textile Mills Limited	434	Progressive Insurance Company Limited
48	Askari Bank Limited	242	Hala Enterprises Limited	435	Prosperity Weaving Mills Limited
49	Askari General Insurance Company Limited	243	Hallmark Insurance Company Limited	436	Prudential Discount Guarantee House Limited
50	Associated Services Limited	244	Hamid Textile Mills Limited	437	Prudential Investment Bank Limited
51	Atlas Battery Limited	245	Hascol Petroleum Limited	438	Prudential Stocks Fund Limited
52	Atlas Honda Limited	246	Haseeb Waqas Sugar Mills Limited	439	Punjab Cotton Mills Limited
53	Atlas Insurance Limited	247	Hashmi Can Company Limited	440	Punjab Oil Mills Limited
54	Attock Cement (Pakistan) Limited	248	Haydary Construction Company Limited	441	Quality Steel Works Limited
55	Attock Petroleum Limited	249	Highnoon Laboratories Limited	442	Quetta Textile Mills Limited
56	Attock Refinery Limited	250	HinoPak Motors Limited	443	Quice Food Limited
57	Avanceon Limited	251	Hira Textile Mills Limited	444	Rafhan Maize Products Limited
58	Awwal Modaraba	252	Honda Atlas Cars (Pakistan) Limited	445	Ravi Textile Mills Limited
59	Ayaz Textile Mills Limited	253	Hub Power Company Limited	446	Redco Textiles Limited
60	Ayesha Textile Mills Limited	254	Huffaz Seamless Pipe Industries Limited	447	Regal Ceramics Limited
61	Azgard Nine - 8.95% Convertable Preference Shares	255	Hum Network Limited	448	Reliance Cotton Spinning Mills Limited
62	Azgard Nine Limited	256	Husein Industries Limited	449	Reliance Insurance Company Limited
63	Azgard Nine Limited (Non Voting Shares)	257	Husein Sugar Mills Limited	450	Reliance Weaving Mills Limited
64	Azmat Textile Mills Limited	258	I.C.C. Textile Limited	451	Resham Textile Industries Limited
65	B.F. Modaraba	259	I.C.I. Pakistan Limited	452	Ruby Textile Mills Limited
66	B.R.R. Guardian Modaraba	260	IBL HealthCare Limited	453	Rupali Polyester Limited

67	Baba Farid Sugar Mills Limited	261	Ibrahim Fibre Limited	454	S.G. Fiber Limited
68	Babri Cotton Mills Limited	262	Ideal Spinning Mills Limited	455	S.G. Power Limited
69	Baluchistan Glass Limited	263	Idrees Textile Mills Limited	456	S.S. Oil Mills Limited
70	Baluchistan Particle Board Limited	264	IGI Insurance Limited	457	Sadoon Textile Mills Limited
71	Baluchistan Wheels Limited	265	IGI Investment Bank Limited	458	Safa Textiles Limited
72	Bank Al-Falah Limited	266	IGI Life Insurance Company Limited	459	Safe Mix Concrete Limited
73	Bank Al-Habib Limited	267	Imperial Sugar Limited	460	Saif Power Limited
74	Bank Of Khyber Limited	268	Indus Dyeing Manufacturing Company Limited	461	Saif Textile Mills Limited
75	Bank Of Punjab Limited	269	Indus Motor Company Limited	462	Sajjad Textile Mills Limited
76	Bankislami Pakistan Limited	270	International Industries Limited	463	Sakrand Sugar Mills Limited
77	Bannu Woollen Mills Limited	271	International Knitwear Limited	464	Saleem Denim Industries Limited
78	Bata Pakistan Limited	272	International Steels Limited	465	Saleem Sugar Mills Limited (O)
79	Bawany Air Product Limited	273	Invest & Finance Securities Limited	466	Saleem Suger Mills Limited (PP)
80	Beema Pakistan Company Limited	274	Invest Capital Investment Bank Limited	467	Saleem Suger Mills Ltd .(P) 6%
81	Bela Automotive Limited	275	Investec Mutual Fund	468	Salfi Textile Mills Limited
82	Berger Paints Pakistan Limited	276	Investec Securites Limited	469	Sally Textile Mills Limited
83	Bestway Cement Limited	277	Ishaq Textile Mills Limited	470	Salman Noman Enterpries Limited
84	Bhanero Textile Mills Limited	278	Ishtiaq Textile Mills Limited	471	Samba Bank Limited
85	Biafo Industries Limited	279	Island Textile Mills Limited	472	Samin Textiles Limited
86	Bilal Fibres Limited	280	Ismail Industries Limited	473	Sana Industries Limited
87	Blessed Textile Mills Limited	281	Ittehad Chemical Limited	474	Sanghar Sugar Mills Limited
88	Bolan Casting Limited	282	J.A. Textile Mills Limited	475	Sanofi-Aventis Pakistan Limited
89	Brothers Textile Mills Limited	283	J.D.W. Sugar Mills Limited	476	Sapphire Fibers Limited
90	Burshane LPG (Pakistan) Limited	284	J.K. Spinning Mills Limited	477	Sapphire Textile Mills Limited
91	Business & Industrial Insurance Company	285	Jahangir Siddiqui Company Limited	478	Sardar Chemical Industries Limited

92	Buxly Paints Limited	286	Janana-de-Malucho Textile Mills Limited	479	Sargodha Spinning Mills Limited
93	Byco Petroleum Pakistan Limited	287	Japan Power Generation Limited	480	Sarhad Textile Mills Limited
94	Capital Assets Leasing Corporation Limited	288	Jauharabad Sugar Mills Limited	481	Saritow Spinning Mills Limited
95	Century Insurance Comany Limited	289	Javed Omer Vohra and Company Limited	482	Saudi Pak Leasing Company Limited
96	Century Paper and Board Mills Limited	290	Javedan Corporation Limited	483	Sazgar Engineering Works Limited
97	Chakwal Spinning Mills Limited	291	Javedan Corporation Limited (Pref Shares)	484	Schon Textiles Limited
98	Chashma Sugar Mills Limited.	292	Johnson and Phillips (Pakistan) Limited	485	Security Investment Bank Limited
99	Chenab Limited	293	JS Bank Limited	486	Security Leasing Corporation Limited
100	Chenab Limited - Preference Shares	294	JS Global Capital Limited	487	Security Leasing Corporation Limited
101	Cherat Cement Company Limited	295	JS Investments Limited	488	Security Paper Limited
102	Cherat Packaging Limited.	296	Jubilee General Insurance Company Limited	489	Service Fabircs Limited
103	Climax Engineering Company Limited	297	Jubilee Life Insurance Company Limited	490	Service Industries Limited
104	Clover Pakistan Limited	298	Jubilee Spinning and Weaving Mills Limited	491	Service Textile Industries Limited
105	Colgate Palmolive (Pakistan) Limited	299	K.S.B. Pumps Co. Limited	492	SFL Limited
106	Colony Textile Mills Limited	300	Kaiser Art and Kraft Mills Limited	493	Shabbir Tiles and Ceramics Limited
107	Crescent Cotton Mills Limited	301	Karam Ceramics Limited	494	Shadab Textile Mills Limited
108	Crescent Fibres Limited	302	Karim Cotton Mills Limited	495	Shadman Cotton Mills Limited
109	Crescent Jute Proudcts Limited	303	KASB Corporation Limited	496	Shaffi Chemical Industries Limited
110	Crescent Standard Modaraba	304	KASB Modaraba	497	Shaheen Insurance Company Limited
111	Crescent Star Insurance Company Limited	305	KASB Securities Limited	498	Shahmurad Sugar Mills Limited
112	Crescent Steel & Allied Products Limited	306	K-Electric Limited	499	Shahtaj Sugar Mills Limited
113	Crescent Textile Mills Limited	307	Khairpur Sugar Mills Limited	500	Shahtaj Textile Mills Limited
114	Cyan Limited	308	Khalid Siraj Textile Mills Limited	501	Shahzad Textile Mills Limited
115	D.G. Khan Cement Company Limited	309	Khurshid Spinning Mills Limited	502	Shakarganj Limited
116	D.M. Textile Mills Limited	310	Khyber Textile Mills Limited	503	Shakerganj Mills Limited - Preference Shares

117	D.S. Industires Limited	311	Khyber Tobacco Company Limited	504	Shams Textile Mills Limited
118	Dadabhoy Cement Industries Limited	312	Kohat Cement Limited	505	Shell Pakistan Limited
119	Dadabhoy Construction Technology Limited	313	Kohat Textile Mills Limited	506	Shezan International Limited
120	Dadabhoy Sack Limited	314	Kohinoor Energy Limited	507	Shield Corporation Limited
121	Dadex Eternit Limited	315	Kohinoor Industries Limited	508	Shifa International Hospitals Limited
122	Dandot Cement Company Limited	316	Kohinoor Mills Limited	509	Siddiqsons Tin Plate Limited
123	Dar-es-Salaam Textile Mills Limited	317	Kohinoor Power Company Limited	510	Siemens Pakistan Engineering Co. Limited
124	Data Agro Limited	318	Kohinoor Spinning Mills Limited	511	Silk Bank(R)
125	Data Textile Limited	319	Kohinoor Textile Mills Limited	512	Silkbank Limited
126	Dawood Capital Management Limited	320	Kot Addu Power Company Limited	513	Silver Star Insurance Co. Limited
127	Dawood Equities Limited	321	Lalpir Power Limited	514	Sind Abadgar Sugar Mills Limited
128	Dawood Hercules Corporation Limited	322	Land Mark Spinning Industries Limited	515	Sindh Modaraba
129	Dawood Lawrancepur Limited	323	Leather Up Industries Limited	516	Singer Pakistan Limited
130	Descon Chemicals Limited	324	Leiner Pak Gelatine Limited	517	Sitara Chemical Industries Limited
131	Descon Oxychem Limited	325	Linde Pakistan Limited	518	Sitara Energy Limited
132	Dewan Automotive Engineering Limited	326	Lotte Chemical Pakistan Limited	519	Sitara Peroxide Limited
133	Dewan Cement Limited	327	Lucky Cement Limited	520	SME Leasing Limited
134	Dewan Farooque Motors Limited	328	Macpac Films Limited	521	Soneri Bank Limited
135	Dewan Farooque Spinning Mills Limited	329	Mandviwala Mauser Plastic Industries Limited	522	Southern Electric Power Company Limited
136	Dewan Khalid Textile Mills Limited	330	Maple Leaf Cement Factory Limited	523	Standard Chartered Bank Limited
137	Dewan Mushtaq Textile Mills Limited	331	Maqbool Textile Mills Limited	524	Standard Chartered Leasing Limited
138	Dewan Salman Fibre Limited	332	Mari Petroleum Company Limited	525	Standard Chartered Modaraba
139	Dewan Sugar Mills Limited	333	Masood Tex.(Pref)	526	Standard Insurance Company Limited
140	Dewan Textile Mills Limited	334	Masood Textile Mills Limited	527	Suhail Jute Mills Limited
141	Diamond Industries Limited	335	MCB Bank Limited	528	Sui Northern Gas Pipelines Limited

142	Din Textile Mills Limited	336	MCB-ARIF Habib Savings & Investments Ltd	529	Sui Southern Gas Company Limited
143	Dolmen City Reit	337	Media Times Limited	530	Summit Bank Limited
144	Dominion Stock Fund Limited	338	Meezan Bank Limited	531	Summit Bank(Con)A
145	Dost Steels Limited	339	Mehmood Textile Mills Limited	532	Summit Bank(Con)B
146	Drekkar Kingsway Limited	340	Mehr Dastgir Textile Mills Limited	533	Sunrays Textile Mills Limited
147	Dyneal Pakistan Limited	341	Mehran Sugar Mills Limited	534	Sunshine Cotton Mills Limited
148	East West Insurance Company Limited	342	Merit Packaging Limited	535	Suraj Cotton Mills Limited
149	East West Life Assurance Company Limited	343	Metropolitan Steel Corporation Limited	536	Suraj Ghee Industries Limited
150	Ecopack Limited	344	Mian Textile Industries Limited	537	Synthetic Products Enterprises Limited
151	EFU General Insurance Limited	345	Millat Tractors Limited	538	Systems Limited
152	EFU Life Assurance Limited	346	Mirpurkhas Sugar Mills Limited	539	Taha Spinning Mills Limited
153	Elahi Cotton Mills Limited	347	Mirza Sugar Mills Limited	540	Taj Textile Mills Limited
154	Ellcot Spinning Mills Limited	348	Mitchells Fruit Farms Limited	541	Tandlianwala Sugar Mills Limited
155	Emco Industries Limited	349	Modaraba Al - Mali	542	Tariq Glass Industries Limited
156	English Leasing Limited	350	Mohib Exports Limited	543	Tata Textile Mills Limited
157	Engro Corporation Limited	351	Mohammed Farooq Textile Mills Limited	544	Telecard Limited
158	Engro Fertilizers Limited	352	Moonlite (Pakistan) Limited	545	Thal Industries Corporation Limited
159	Engro Foods Limited	353	Morafco Industries Limited	546	Thal Limited
160	Engro Polymer and Chemicals Limited	354	Mubarak Textile Mills Limited	547	Thal Textile Mills Limited
161	Engro Powergen Qadirpur Limited	355	Mughal Iron and Steel Industries Limited	548	Thatta Cement Company Limited
162	Escorts Investment Bank Limited	356	Mukhtar Textile Mills Limited	549	The Searle Company Limited
163	Exide Pakistan Limited	357	Murree Brewery Company Limited	550	Towellers Limited
164	Extraction (Pakistan) Limited	358	N.P. Spinning Mills Limited	551	TPL Direct Insurance Limited
165	Faisal Spinning Mills Limited	359	Nadeem Textile Mills Limited	552	TPL Trakker Limited

166	Faran Sugar Mills Limited	360	Nagina Cotton Mills Limited	553	Transmission Engineering Industries Limited
167	Fateh Industries Limited.	361	National Bank Of Pakistan	554	Treet Corporation Limited
168	Fateh Sports Wear Limited	362	National Fibres Limited	555	Treet Corporation Limited (Pref Term Certificates)
169	Fateh Textile Mills Limited	363	National Foods Limited	556	TRG Pakistan Limited
170	Fatima Enterprizes Limited	364	National Refinery Limited	557	Tri-Pack Films Limited
171	Fatima Fertilizer Company Limited	365	National Silk and Rayon Mills Limited	558	Tri-Star Mutual Fund Limited
172	Fauji Cement Company Limited	366	Nazir Cotton Mills Limited	559	Tri-Star Polyester Limited
173	Fauji Fertilizer Bin Qasim Limited	367	Nestle Pakistan Limited	560	Tri-Star Power Limited
174	Fauji Fertilizer Company Limited	368	NetSol Technologies Limited	561	Trust Investment Bank Limited
175	Faysal Bank Limited	369	Next Capital Limited	562	Trust Modarba
176	Fazal Cloth Mills Limited	370	NIB Bank Limited	563	Trust Securities and Brokerage Limited
177	Fecto Cement Limited	371	Nimir Industrial Chemicals Limited	564	UNICAP Modarba
178	Feroze 1888 Mills Limited	372	Nina Industries Limited	565	Unilever Pakistan Foods Limited
179	Ferozsons Laboratories Limited	373	Nirala MSR Foods Limited	566	United Bank Limited
180	First Al-Noor Modarba	374	Nishat Chunian Limited	567	United Brands Limited
181	First Capital Equites Limited	375	Nishat Chunian Power Limited	568	United Distributors Pakistan Limited
182	First Capital Securites Corporation Limited	376	Nishat Mills Limited	569	United Insurance Company of Pakistan Limited
183	First Constellation Modaraba	377	Nishat Power Limited	570	Universal Insurance Company Limited
184	First Credit & Invest Bank Limited	378	Noon Pakistan Limited	571	Usman Textile Mills Limited
185	First Dawood Investment Bank Limited	379	Noon Pakistan Limited - Non Voting Shares	572	Wah Noble Chemicals Limited
186	First Dawood Mutual Fund	380	Noon Sugar Mills Limited	573	WorldCall Telecom Limited
187	First Elite Capital Modaraba	381	Noor Silk Mills Limited	574	Wyeth Pakistan Limited
188	First Equity Modarba	382	Oil and Gas Development Company Limited	575	Yousuf Weaving Mills Limited
189	First Fidelity Leasing Modaraba	383	Olympia Spinning and Weaving Mills Limited	576	Zahidjee Textile Mills Limited
190	First Habib Modarba Limited	384	Olympia Textile Mills Limited	577	Zahoor Cotton Mills Limited

191	First IBL Modaraba	385	Orix Leasing Pakistan Limited	578	Zeal Pak Cement Factory Limited
192	First Imrooz Modaraba Limited	386	Otsuka Pakistan Limited	579	Zephyr Textile Limited
193	First Investec Modaraba	387	Pace (Pakistan) Limited	580	ZIL Limited
194	First National Bank Modarba				

