

Characteristics of Consumers Influencing Adoption Behavior of XBRL

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This paper empirically examines the impact of demographic factors upon the XBRL adoption among consumers, the six demographic characteristics that provide insights to XBRL adopters and non-adopters, as they were identified from the literature review used in this study. These included age, gender, education, experience and type of industry. The data on these variables was collected on a global scale employing an online survey. A self-administered questionnaire was positioned on the home page of the XBRL network web site with a total of 166 responses obtained from the respondents. The findings of this research suggest that the four variables of age, gender, experience, type of industry and country significantly differentiated the adopters from the non-adopters of the XBRL, whilst education was found to be non-significant. The implications of the findings are discussed in the context of promoting the adoption of XBRL technology.

Keywords: XBRL, Adoption, Demographic Characteristics.

1. Introduction

XBRL is based on proven XML technology, which has been in the industry for many years. XML is a common transport language that allows disparate organizations and systems to communicate more quickly, easily and accurately. Software, middleware, and data transformation vendors are all migrating towards XML at a minimum pace and many vendors have gone further and included XBRL in their product offerings. The field of interactive data (e.g. XBRL) is a new and emerging one for researchers, especially when investigating the adoption pattern. The early research in this area has focused mainly upon the organizational adoption (Troshani & Doolin 2007); the extent of information provided digitally (Rowbottom, Allam & Lymer 2005); information needs and presentation format (Beattie & Pratt 2003; Hodge, F & Pronk 2006; Hodge, FD 2001; Hodge, FD, Kennedy & Maines 2004) and impact of digital presentation format on decision making (Debreceeny, Gray & Rahman 2002; Wu & Vasarhelyi 2004). However, little attention has been given to the demand from a consumers' perspective. Recent studies that addressed the consumers' view on adoption technology suggest that attitudinal, normative and control (Marche & McNiven 2003) are the major factors for technology adoption (e.g. XBRL).

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Selamat and Rawashdeh (2009) discussed the adoption of XBRL technology. They suggest that ease-of-use, perceived usefulness, compatibility and relative advantage which, combined with social influence, influence the intention to use XBRL. Pinsker and Wheeler (2009) examined the users' point of views of the efficiency and effectiveness of XBRL, and suggested that the perceived usefulness and perceived ease of use affect user attitudes toward XBRL adoption or acceptance. In addition, they claimed that there is global uncertainty regarding XBRL adoption which needs to be further explored.

The aforementioned studies were initial attempts to examine factors such as ease-of-use, perceived usefulness, compatibility and relative advantage, which affect the adoption of XBRL by the users of financial data. Nevertheless, the adoption rate and behavior of the XBRL from the consumers' perspective are not well explored. This is because XBRL is new and recent to financial data consumers. A survey on XBRL adoption in the world revealed that CFAs are less reluctant to use XBRL (CFA, 2009).

XBRL offers a great amount of speed and ease for the consumers' use (HTML, PDF). However, it is not known whether the consumers are adopting XBRL services available to them or not. Additionally, as XBRL standard is still under development, an investigation is needed to study whether or not demographic factors (Rogers 1995) and type of Internet medium (XBRL, HTML, PDF) are affecting their adoption. Utilizing the aforementioned reasoning as motivating factors for this research, the aim of this study is to conduct an empirical examination, which investigates the impact of demographic factors on the adoption of XBRL among financial data consumers. In turn, this could benefit the participants in the financial information supply chain such as registrants, regulators and investors. This is because they can access to tagged financial data for analytical and review purposes effectively and efficiently.

The paper is organized as follows. Next section presents a theoretical justification for the underlying demographic variables while developing hypotheses. Section 3 offers a brief discussion of the used research method. The findings are then presented and discussed in sections 4 and 5. Finally, a conclusion to the research is presented in the concluding section.

2. Theoretical Frameworks

There are certain characteristics that are found to be associated with an individual's innovativeness. Rogers (1995) termed such a group of characteristics as demographic characteristics, which include age, education, occupation and type of industry. Since these demographic characteristics are correlated to an individual's innovativeness, they influence the rate of adoption and diffusion of innovations (Rogers, 1995). These demographic characteristics have been widely used to examine a number of issues within the information systems area such as the computer (Carveth & Kretchmer 2002; Venkatesh & Davis 2000), the Internet (Carveth & Kretchmer 2002) and XBRL adoption and its subsequent impact on users (Henderson, Sheetz & Trinkle 2009). Given the wide applications of demographic characteristics

Rawashdeh, Selamat & Abdullah

for examining the adoption of a number of aforementioned technologies, their role is also imperative for examining the adoption of the XBRL.

The adopters of an existing and related innovation or technology are likely to be more innovative than non-adopters (Rogers, 1995). Hence adopters of existing technology are more likely to adopt emerging technologies and services as they possess a higher level of experience, education and skills to perform behavior. Therefore, by utilizing this reasoning it can be assumed that the adopters of technology are more likely to be XBRL adopters. This suggests that demographic factors of the XBRL should be significantly correlated with the adoption of the XBRL.

Venkatesh et al. (2003) extended TAM by incorporating social influence factor. They concluded that social influence had a significant influence on the adoption of information technology. When information technology is introduced in an organization, the consumers familiarize with its useful features. When they experienced its usefulness, they communicate it to other group members as a referent and have a positive attitude towards the technology.

Key demographic variables such as age, gender, education and experience (Harrison & Rainer 1992) offer significant information regarding the characteristics of the targeted population. For example, these variables have been included in previous studies that examined the adoption of information communication technologies. Further, the aforementioned social variables have also been applied to investigate software piracy (Solomon & O'Brien 1990), technology adoption (Carveth & Kretchmer 2002; Venkatesh et al. 2003), e-government adoption (Huang, D'Ambra & Bhalla 2002) and demographic differences amongst information system professional (Holmes 1997). Additionally, the previous researches (Gefen & Straub 1997; Venkatesh & Brown 2001) also highlighted the role of several external variables such as, demographic characteristics on the decomposed belief structure and, ultimately, adoption and usage.

Since home computers, the telephone, and access to the Internet can be placed in the same technology cluster (Rogers, 1995), the demographic variables that have been employed to study one technology can also be used to study others (Rogers, 1995). Therefore, the demographic variables such as age, gender, education, experience, country and industry that were utilized to examine home computer adoption in the Internet can also be employed to study XBRL adoption.

The abovementioned demographic variables have also been widely examined within the accounting information system discipline. There are other demographic and geographic variables such as disability, ethnicity, marital status and geographic locations that may provide useful information (Gilligan & Wilson 2009; Rice 1997) on the study of adoption. However, due to feasibility reasons (face-to-face interviews would have been required, but this is beyond the scope of this research) these variables were not included in this study.

Rawashdeh, Selamat & Abdullah

The study of the aforementioned variables was termed as segmentation, which involves the breakdown of the total broad and varied markets into homogenous, distinct, accessible, stable and large groups (Gilligan & Wilson 2009; Rice 1997). Therefore, a study of the demographics of potential adopters may assist the policymakers and XBRL International by identifying various segments' specific needs and constraints. In short, demographic factors are considered relevant in this study and thus included in the conceptual model. The definition and description of each demographic variable is offered in the following six subsections.

2.1 Age

According to Finch (1986), age can be used as an independent variable to discuss a specific social grouping, social process, or piece of individual or collective attitudinal. A number of research studies within the area of information system have highlighted the importance, direct, and moderating influence of age on the behavioral intention, usage and adoption behaviors (Morris & Venkatesh 2000). Venkatesh et al. (2003) observed that the major age group that adopts and uses computers in the USA ranges between 15 and 17 years old, and then followed by 26 to 35 years old. However, age divergence is expected to influence the adoption and use of XBRL. The youth and middle age groups are assumed to be more associated with XBRL adoption compare than old age group. Thus, the following hypothesis is developed:

H1: There is a significant difference between the adopters and non-adopters of the various age groups.

2.2 Gender

Gender is considered as an important variable in social research (Finch 1986; Paige Miller et al. 2006). According to Jackson and Scott (2002), gender is related to the hierarchical separation between man and women, inserted in both social institution and social practices. It can be used as a descriptive and explanatory factor (Morgan, 1986). The role of gender in the use and adoption has been examined by many research studies (Arnold et al. 2008; Ghani, Laswad & Tooley 2009; Tribunella & Tribunella 2006). The findings showed that gender has a vital role in the use and adoption of technology, either from the organizational or individual contexts. Venkatesh et al. (2003) found that males personal computer more than females and in turn proposed that gender is one of the most essential factors when investigating personal computer usage and adoption from the individual context. Anderson et al. (1999) also found that there is an explicit gender divergence in the adoption and usage of personal computer and telephone call. All these findings motivated the researcher to propose the following hypothesis:

H2: The adopters of XBRL will be more from male than female gender.

2.3 Education

The educational factor has a vital role too in the usage and adoption of innovations. For instance, there is a significant relationship between employee education and tendency to adopt and use technologies (Warren 2004). According to Agarwal and Prasad (1999) and Laforet and Li (2005), the educational level or background was shown to be antecedents of perceived usefulness and perceived ease of use. Consequently, the consumers who possess different educational level and background might show divergent point of view, comprehension, thoughts in relation to the use and adoption of XBRL. Therefore, educational level and background is examined as a separate variable. Previous researches proposed that individuals who have higher educational qualification incline to adopt and use new technologies (Finch, 1986; Rogers, 1995). Venkatesh et al. (2003) supported this view by saying that there is a positive interrelation between level of education, technology ownership and usage. This is because through education an individual possess necessary skills to use and adopt technologies successfully more than the unskilled ones.

The importance of education does not only remain in its influence whether to accept technologies or not but also it affects human capital since it determines the competence to use and adopt XBRL within the firm. Doolin and Troshani (2005) stated that: "It's easier to use XBRL-enabled software tool when you understand the fundamental technology underneath it because you know what it can and can't do when you try to push it." Therefore, dedicated technological tasks such as taxonomy expansion, growth, maintenance, configuration, and set-up of XBRL-enabled applications would be the area of consumers specializing in information technology.

Doolin and Troshani (2005) found that education is the essential driver of XBRL adoption in Australia. Thus, it is suggested that education can be used as an independent variable that provides details on the divergence between XBRL adopters and non-adopters. In order to accommodate this, the following hypothesis is developed:

H3: There is a significant difference between the adopters and non-adopters of XBRL in different levels of education.

2.4 Experience

Experience refers to the extent to which consumers have used the new technology. The Internet financial reporting experience refers to the experiences that consumers have while interacting with Internet presentation format. This definition of experience consists of many studies that have investigated specific aspects of the electronic financial reporting experience: the perceived ease of use and usefulness of the XBRL (Henderson et al., 2009), the quality of information and technical performance of the website (Saeed & Abdinnour-Helm 2008), the effectiveness of the search process (Hodge et al., 2004), the effect of presentation format on decision quality in a digital reporting environment (Ghani, Laswad & Tooley 2009).

Rawashdeh, Selamat & Abdullah

Similar to the above studies, it is possible that XBRL adoption is influenced by factors such as consumers' experience and familiarity with presentation format. This strand of research on the presentation format experience makes it clear that the characteristics of a presentation format are important item that influence whether consumers are able and willing to use XBRL. Positive user experience is antecedents for a situation wherein consumers can decide to make use of XBRL and easily use XBRL to prepare, processes, and analyzing financial reports. In order to include this, the following hypothesis is developed:

H4: There is a significant difference between the adopters and non-adopters of XBRL in different levels of experience.

2.5 Type of Industry

In this research, industry refers to the people or companies engaged in a particular kind of commercial enterprise. It is described as the manufacturing of a good or service within a category (Ogbonna & Harris 2005). Here, the type of industry has been categorized into different criteria such as agriculture, forestry, fishing and hunting mining, quarrying, and oil and gas extraction utilities, construction manufacturing, wholesale trade retail, trade transportation and warehousing, information, finance and insurance, real estate and rental and leasing professional, scientific, and technical services, management of companies and enterprises, administrative and support and waste management and remediation services, educational services, health care and social assistance arts, entertainment, and recreation, accommodation and food services and other services (except public administration) public administration (Henderson et al., 2009). The type of industry has an important role too in the usage and adoption of innovations (Henderson et al., 2009). For instance, there is a positive connection between type of industry and tendency to adopt and use new innovations (Ogbonna & Harris 2005). Type of industry is related to be antecedents of perceived usefulness and perceived ease of use. Consequently, the individual who works in information industry might show high capability in relation to the use and adoption new of innovations. Therefore, type of industry is examined as a separate variable. In order to achieve this, the following hypothesis is developed.

H5: There is a significant difference between the adopters and non-adopters of XBRL in different types of industry.

3. Research Methodologies

The online survey was considered to be a suitable research method for data collection in this study (Henderson, Sheetz & Trinkle 2009; Selamat & Rawashdeh 2010). A self-administered questionnaire was the primary online survey instrument for data collection, and was used which addresses the following issues: issue of reliability of information by reducing and eliminating frequencies that the same questions are asked, and how they are presented (Fowler 2009). Furthermore, online questionnaire for facilitating easier data

collection and analysis within a short period of time from the sample of respondents, which was a significant issue for this research (Fowler 2009).

Fowler (2009) has suggested that, "if one is going to have a self-administered questionnaire, one must reconcile oneself to closed questions, which can be answered by simply checking a box or circling the proper response from a set provided by the researcher". Taking this into consideration, this questionnaire will contain multiple questions, closed questions. The literature furnished an initial understanding of XBRL adoption and subsequently formed the basis for the formulation of the questionnaire. Due to the uncertainty regarding the number of individual consumers using the XBRL solutions, the self-selection sampling was adopted for inviting people to participate in the survey. Self-selection sampling is a technique that broadcasts an invitation message and waits for responses voluntarily submitted by people (Saunders, Lewis & Thornhill 2009). It is a suitable methodology for collecting data through online or via an online questionnaire because no contact detail of targeted population is available.

4. Findings

4.1. Response Rate

The questionnaire was positioned on the home page of the XBRL Network web site together with general information about the research between 11 February and 11 April 2010. Using the self-selection sampling technique, this research obtained a self-selection sample of 166 individuals started the questionnaire, however only 68 completed this questionnaire. Therefore, only the number of respondents from those 68 consumers was used for calculating the response rate. This resulted in a 40.9% response rate ($R = 68 / 166 = 40.9\%$).

The usable 68 responses received were fewer than would have been ideal, but the researcher decided to continue with the research and analysis of results for several reasons. It has been decided to extend the end period of the questionnaire in order to increase of response rate. However, without the existence of a big sample frame, it was therefore doubtful whether a higher response rate could have been achieved by any other cost effective means. The rate in terms of percentage coverage (40.9%) was a sufficient basis for preliminary conclusions. Since XBRL is relatively new technology in terms of widespread use, this might lead to a low level of knowledge. Also, sampling size is important to establish the representiveness of the sample for generalizability. If the random sample is not used, a large sample size will not, in itself, allow the findings to be generalized to the population. Because of this, it was anticipated at the start of the study that a non-response bias might exist with respect to potential respondents who did not know of XBRL and who would therefore not be interested in participating in the survey.

This proposition was conceivably borne out by the fact that a considerable number of people who started the online questionnaire did not read it. It is worth noting that the response rate of the potential adopters completing the

online survey was 40.9%. Earlier research of this type used by Pinsker (2003) also had an extremely low response rate, with only 17 correct responses in the sample 734 (Pinsker 2003). Nel and Steenkamp (2008) continued in their analysis of results despite of low rate in terms of percentage coverage (2.2%). Likewise, Deshmukh et al. (2006) obtained 41 responders out of 139 surveys sent (a 30% response rate). According to previous research, the low response rate may be attributed to the fear associated with getting a virus from the file, and some of the potential respondents may not want to deal with the multiple steps involved in the completion of the survey (Dommeyer & Moriarty 2000).

4.2 XBRL Adoption and Non-Adoption

Table 1 summarizes the demographic and IFR use profile of the survey respondents. From the 68 responses, 27.9% were in the 25-34 age groups, which formed the largest response category, while 45-54 age groups were the next largest (23.5%). In terms of gender, there were more male (72.1%) than female (27.9%) respondents participated in the online survey. All respondents possessed high education qualifications: 63.2% have degree, 16.2% have PhD, and 11.8% have master degree. 8.8% have diploma. Responses for IFR experience varied between 27.9% for above 20 years category and 11.8% for 10-15 years and 1 year categories (Table 1).

The result for type of industry varied between 4.4% for the professional, scientific, and technical services and 23.5% for the finance and insurance. The responses come from 16 different countries: Japan 2.9%, Netherlands 3.0%, USA 20.6%, India 14.7%, UK 1.5%, France 8.8%, Germany 1.5%, Spain 4.4%, China 5.9%, Malaysia 5.9%, UAE 5.9%, Italy 4.4%, South Africa 5.9%, Singapore 5.9%, Canada 5.9%, Australia 2.9%. From the 68 respondents, only 38 (52.9%) are the adopters of XBRL and the remaining 32 (47.1%) are non-adopters.

Rawashdeh, Selamat & Abdullah

Table 1: Demographic information of the survey respondents

	Freq.	%%		Freq.	%
Age			Country		
17-24	3	4.4	Japan	2	2.9
25-34	19	27.9	Netherlands	2	3
35-44	15	22.1	USA	14	20.6
45-54	16	23.5	India	10	14.7
55-64	15	22.1	UK	1	1.5
65-74	0	0	France	6	8.8
above 75	0	0	Germany	1	1.5
Total	68	100	Spain	3	4.4
Experience			China	4	5.9
1 Year	8	11.8	Malaysia	4	5.9
2-5 Years	14	20.6	UAE	4	5.9
5-10 Years	9	13.2	Italy	3	4.4
10-15 Years	8	11.8	South Africa	4	5.9
15-20 Years	10	14.7	Singapore	4	5.9
Above 20	19	27.9	Canada	4	5.9
Total	68	100	Australia	2	2.9
Education			Type of Industry		
Diploma	6	8.8	Information	15	22.1
Degree	43	63.2	Finance and Insurance	16	23.5
Master (MA, Msc)	8	11.8	Professional, Scientific, and Technical	3	4.4
PH.D	11	16.2	Educational Services	6	8.8
Total	68	100	Health Care and Social Assistance	5	7.4
Gender			Accommodation and Food Services	4	5.9
Male	49	72.1	Other Services (except Public)	15	22.1
Female	19	27.9	Public Administration	4	5.9
Total	68	100	Total	68	100

4.3 Age and Adoption of XBRL

It can be seen that there was clear and significant age difference between XBRL adopters and non-adopters (Tables 2 and 3). Table 2 represents Pearson's chi-square test that confirmed that there was a significant difference between the ages of the ($\chi^2(6, N = 68) = 20.41, p < 0.001$) (Table 2). Thus, hypothesis H1 was accepted.

Table 2: Age and XBRL adoption χ^2 test

	Value	Df	p (2-sided)
Pearson Chi-Square	20.415(a)	6	0.000
a 2 cells (20.0%) have expected count less than 5. The minimum expected count is 1.41.			

Table 3: Age as a determinant of XBRL adopters and non-adopters

Age Categories	Non-adopters		XBRL adopters	
	Frequency	Percent	Frequency	Percent
17-24	1	3.1	2	5.6
25-34	5	15.6	14	38.9
35-44	13	40.6	2	5.6
45-54	3	9.4	13	36.1
55-64	10	31.3	5	13.9
65-74	0.0	0.0	0.0	0.0
above 75	0.0	0.0	0.0	0.0
Total	32	100	36	100

4.4 Gender and Adoption of XBRL

Table 4 illustrates that amongst the non-adopters, females (12.5%) proportion was less than males (87.5%). However, within the XBRL adopters, the gap between females (41.7%) and males (58.3%) was not big.

Table 4: Gender as a determinant of XBRL adopters and non-adopters

Gender	Non-adopters		XBRL adopters	
	Frequency	Percent	Frequency	Percent
Male	28	87.5	21	58.3
Female	4	12.5	15	41.7
Total	32	100	36	100

Thus, hypothesis H2 was accepted since there were significant differences between the genders of XBRL adopters and non-adopters ($1, N = 68$) = 7.158, $p = 0.007$) (Table 5).

Table 5: Gender and XBRL adoption (χ^2 test)

	Value	Df	P (2-sided)
Pearson Chi-Square	7.158(b)	1	.007
b cells (.0%) have expected count less than 5. The minimum expected count is 8.			

4.5 Education and Adoption of XBRL

Table 6 shows the educational background of the XBRL adopters and non-adopters. The findings indicate that the majority of the adopters have first degree (72.2%), followed by 16.6% who have PhD. 8.3% of XBRL adopters have master degree. The Pearson's chi-square test validated that there was no significant difference between the adopters and non-adopters of XBRL in terms of educational background (χ^2 (3, $N = 68$) = 4.92, $p = 0.17$) (Table 7). Thus, hypothesis H3 was rejected since there are no significant difference between XBRL adopters and non-adopters (Table 7).

Table 6: Education as a Determinant of XBRL adopters and non-adopters

Education level	Non-adopters		XBRL adopters	
	Frequency	Percent	Frequency	Percent
Diploma	5	15.6	1	2.8
Degree	17	53.1	26	72.2
Postgraduate (MA, MSC)	5	15.6	3	8.3
Postgraduate (PHD)	5	15.6	6	16.7
Total	32	100	36	100

Table 7: Education and XBRL adoption (χ^2 Test)

	Value	Df	p (2-sided)
Pearson Chi-Square	4.923(a)	3	.178
a 4 cells (50.0%) have expected count less than 5. The minimum expected count is 2.82.			

4.6 Experience and Adoption of XBRL

The findings illustrated in Table 8 indicate that the number of adopters increases with the increase of experience. The Pearson’s chi-square test confirmed that there was a significant difference between the experience of the adopters and non-adopters of XBRL (χ^2 (5, N = 68) = 20.487, $p < 0.001$) (Table 9). Thus, hypothesis H4 was accepted since there were significant difference between XBRL adopters and non-adopters (Table 9).

Table 8: Experiences as a Determinant of XBRL Adopters and Non-adopters

Experience Categories	Non-adopters		XBRL adopters	
	Frequency	Percent	Frequency	Percent
1 year	4	12.5	4	11.1
2-5 years	4	12.5	10	27.8
5-10 years	4	12.5	5	13.9
10-15 years	8	25.0	0	0
15-20 years	8	25.0	2	5.6
above 20	4	12.5	15	41.7
Total	32	100	36	100

Table 9: Experience and XBRL adoption (χ^2 Test)

	Value	df	p (2-sided)
Pearson Chi-Square	20.487(a)	5	.001
a 7 cells (58.3%) have expected count less than 5. The minimum expected count is 3.76.			

4.7 Industry and Adoption of XBRL

Table 10 presents type of industry of the XBRL adopters and non-adopters. The findings show that majority of the adopters are employees in the information sector (30.6%).

Table 10: Industry of XBRL Adopters and Non-adopters

Industry Categories	Non-adopters		XBRL adopters	
	Frequency	Percent	Frequency	Percent
Information	4	12.5	11	30.6
Professional, Scientific, and Technical Services	0.0	0.0	3	8.3
Educational Services	0.0	0.0	6	16.7
Health Care and Social Assistance	0.0	0.0	5	13.9
Finance and Insurance	16	50.0	0.0	0.0
Accommodation and Food Services	4	12.5	0.0	0.0
Public Administration	0.0	0.0	4	11.1
Other Services (except Public Administration)	8	25.0	7	19.4
Total	32	100	36	100

This is followed by other services (except public administration) (19.4%) educational services (16.7%), health care and social assistance technical services (13.9), public administration (11.1%) and professional, scientific, and technical services (8.3%). The Pearson's chi-square test validated that there was a significant difference between type of industry of the adopters and non-adopters of XBRL ($\chi^2 (7, N = 68) = 41.241, p < 0.001$) (Table 11). Thus, hypothesis H5 was accepted since there was significant difference between XBRL adopters and non-adopters from the industrial perspective (Table 11).

Table 11: Industry and XBRL adoption (χ^2 Test)

	Value	df	p (2-sided)
Pearson Chi-Square	41.241 (a)	7	0.000
10 cells (62.5%) have expected count less than 5. The minimum expected count is 1.41.			

5. Discussions

The demographic characteristic, were analyzed using chi-square test. Four (age, gender, experience and type of industry) out of six variables were significantly distinguishing the adopters from the non-adopters. The education variable failed to differentiate XBRL adopters and non-adopters.

Early expectation of the impact of age on the consumers' XAB is aligned with the results obtained in this research. It is argued that older people are less likely to use XBRL. A possible explanation for this is that they do not possess basic skills to operate accounting applications (e.g. XBRL solution) and majority of them do not work (retired). Most of the adopters belonged to the age group of 25-34 years. This is because this age group is considered to be economically active. The respondents within this age group may have different experiences. A high number of non-adopters belong to the age ranges from 35-64 and 55-64 years.

In the case of gender, the hypothesis was supported by the data collected in this research. Although the adopters and non-adopters are mostly male, the differences were large enough to reach significance. This may be due to majority of people in the IFR field is male (Benschop & Meihuizen 2002). This

theoretical claim was also supported by previous studies, such as Marshall et al. (2010) that reported the increase in gender gap in the XBRL adoption.

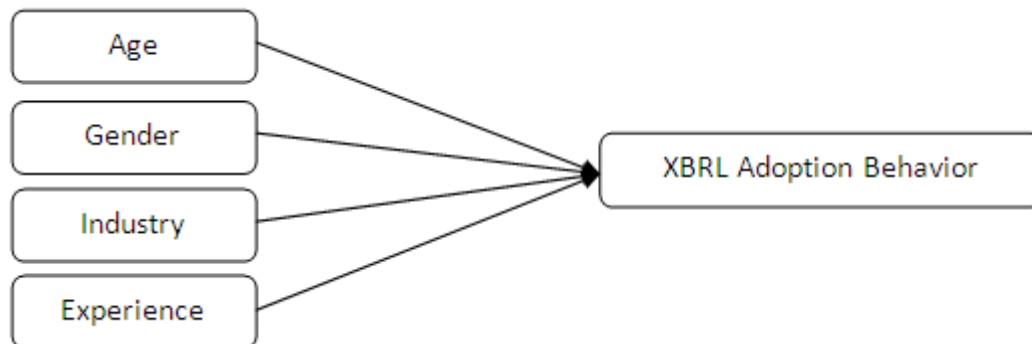
Initially it is expected that educated respondents are most likely to adopt XBRL. The findings of this research are not supporting the prediction of the existing theories. This is because there is no difference between adopters and non-adopters in terms of educational background.

The findings also revealed that experience level was good predictor of XBRL adopters and non-adopters. This is in tandem with the arguments offered in the theoretical section (Venkatesh & Davis 2000). Furthermore, it can be concluded that most of the adopters are experienced people.

The findings indicate that majority of XBRL adopters belong to Information industry. It is expected that the respondents from the information industry would use XBRL. This can be attributed to the following reasons: the respondents work in the information field. However, other consumers may work in different industry. Second, XBRL is a standard for preparing, publishing, and analyzing financial information for both public and private companies. Therefore, it is most likely that the consumers in the information field become the adopters of XBRL than non-adopters.

The above findings are then summarized in a diagram. The diagram is as illustrated in Figure 1. This is to ease the process of understanding the demographic factors affecting XBRL adoption among financial data consumers.

Figure 1: Refined Demographic Factors on XBRL Adoption



6. Conclusions

This paper empirically examined the impact of demographic factors on the adoption of XBRL. Six demographic characteristics (i.e. age, gender, education, experience and type of industry) were utilized to provide insights of adoption. The study concludes that the demographic characteristics of age, gender, experience and type of industry have an imperative role in understanding the adoption of XBRL.

In order to reduce the demographic gap during the diffusion process, Rogers (1995) suggested that the change agent should follow the strategy of greatest resistance, so that greater attention is paid towards diffusion policy that

encourages lower demographic. That means that, in the case of the XBRL, non-adopter categories such as older aged people and consumers with degree education and non adopter countries should be targeted first. Hence, an important consideration for policy makers responsible for XBRL deployment is to encourage the aforementioned segments of consumers that are slow in adopting emerging XBRL technology. This could help in reducing the demographic gap. Also, the organizations, such as XBRL solution providers, should remove demographic barriers that may inhibit potential consumers from adopting innovation such as the XBRL. For example, the younger consumers are not adopting XBRL for two important reasons. First, majority of younger people do not have the experience in using financial data analysis tool; and second, they do not aware of the potential benefits of XBRL services. Therefore, the key challenge for policy makers is to implement ways of involving the younger consumers to the XBRL usage.

6.1 Limitations and future research

In this survey the sample was drawn from the IFR consumers (online survey); therefore, the generalization of the findings requires care. However, the limitation of this online survey was that the response rate was low; therefore, the confidence level in findings was limited.

Since this was a self-administered survey, by keeping the response rate in mind (Fowler 2009), only closed ended questions were included. To overcome this limitation, future studies may employ data collection methods such as, interviews or focus groups that will examine the adoption and diffusion XBRL services.

This study further emphasizes the suggestion made by previous studies that is in order to highlight demographic differences it will also be interesting to compare the demographic characteristics of early consumers to other consumers (CFA 2009; Nel & Steenkamp 2008). Due to the unavailability of such studies, it was not possible to make such a comparison within this research; it is recommended that future research should investigate such issues.

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Rawashdeh, Selamat & Abdullah

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