

THE EFFECTS OF DEMOGRAPHIC VARIABLES ON KNOWLEDGE SHARING BEHAVIOUR

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Abstract

The purpose of this study was to explore the relationship between demographic variables and two forms of knowledge sharing behavior (KSB) to give some suggestions for managers. Data collected from 234 employees of some departments such as research and development, technology,... of some Vietnam telecommunication companies in order to test the general model: $KSB = K + \text{gender}(xa) + \text{age}(xb) + \text{educational qualification}(xc) + \text{work experience}(xd)$. The study found that males tend to share more of their knowledge than females and staffs aged from 31 to 45 tend to share their knowledge more than those aged from 20 to 30 while 20-30 year old staffs tend to collect knowledge more than 31-45 year old staffs.

Keywords: *knowledge, knowledge sharing, knowledge management*

INTRODUCTION

Knowledge sharing is being studied by domestic and foreign researchers. These studies have contributed both in theory and practice of knowledge sharing; focused on understanding the attitudes about knowledge sharing; factors affecting knowledge sharing behavior and making proposals to promote knowledge sharing within organizations. However, the study of knowledge sharing in enterprises in each field is still open. Every field of study has its own characteristics; the attitudes, intentions and knowledge sharing behavior of employees in each different sector should be explored. In Vietnam, the telecommunication industry has rapid growth, the development usually focuses on width and do not pay attention to the depth and knowledge sharing is one solution for these companies to grow lasting. The era of industrialization and information age has made the telecommunication industry expand into diversified functions to support the

growth of technological advancement for better services demanded by any nation (Yusof, 1998). However, in this new millennium, this industry has to face with the increasing level of unpredictability of business environment and competitiveness of market due to the globalization of business, the shift from production- to knowledge-based economy, the growth of information communications technology (Chin Wei, 2006). It is apparent that very limited studies on knowledge management in general and knowledge sharing behavior in particular have been conducted on the telecommunication industry, and the lack of studies focusing on the role of demographic variables on knowledge sharing behavior. Therefore, this research will focus on understanding the relationship between some demographic variables on knowledge sharing behavior to give some suggestions for managers in Vietnam telecommunication companies in promoting knowledge sharing behavior.

Tuomi (1999, p. 230) defined

knowledge sharing as the readiness of someone within an organization to publish the knowledge he has with others. Knowledge sharing is a social process that takes place through the interaction and communication between individuals. Lee (2001) defined knowledge sharing as the activities that involve transferring knowledge whether tacit or implicit knowledge from one person, group or organization to another. De Vries (2006, p. 456) denoted that knowledge sharing as the process of giving and receiving knowledge. It is also the process of exchange data, information, know how, skills, feedback and expertise regarding products, procedures and processes Myers and Cheung (2008, p.354).

Through knowledge sharing, organization can improve their efficiency, reduce training cost and risks due uncertainty Song (2002, p.173). A firm can successfully promote knowledge sharing culture not only directly incorporating knowledge in its business strategy, but knowledge sharing also by changing people attitudes and behaviours to make sure the implementation is consistent Connelly and Kelloway (2003, p.224).

Organizations can choose to invest all their resources into knowledge management, however, when staffs are not joining in sharing their knowledge among themselves within the organization, then the knowledge management efforts become a failure. When knowledge is not shared in the organization then the advantages of knowledge will not be actualized Eugene and Khalil (2011, p.564).

Even though many studies have been conducted on knowledge management practices and knowledge sharing in various organizations, only a few have been carried out in the telecommunications industry Chin Wei et al (2009,p.665); Suraj and Ajiferuke (2013,

p.342). A preliminary study performed by Chong and Yeow (2005, p.434) reported that most of the telecommunications organizations in Malaysia are at the beginning stage of knowledge management implementation. Strang (2010, p.673) has described how a community of practice in an Australian telecommunications e-business company relied on knowledge management principles (learning, sharing and creating) as well as cognitive learning processes (applying, analyzing and evaluating) to create innovative portfolios. Studies of the Indian telecommunications industry by Seng and Lin (2004,p.354) and Singh and Sharma (2011, p.479) have also showed that know-how, process, and practice have become the key sources of core competency for the Indian telecommunications industry.

Effective knowledge sharing is crucial for the success of every organization. Some scholars Bordia et al., (2006, p.156); Lin (2007,p.621) have attributed individuals' demographic variables to knowledge sharing behaviour. Elsass and Graves (1997, p213) also reported that females were more likely to share their knowledge than males. Miller and Karakowsky (2005,p.523) also found differences in knowledge sharing behaviour between men and women. Bordia et al., (2006, p325) investigated the effect of evaluation apprehension and perceived benefits of knowledge sharing on knowledge sharing intention among men and women: females displayed higher perceptions of the benefits of knowledge sharing than males. Lin (2007, p521) found that the correlation between instrumental ties and knowledge sharing behaviour was stronger for females than males. Pangil and Nasrudin (2008,p.14) studied that there is a disparity between men and women in terms of tacit knowledge-sharing behaviour. Boateng et al. (2015, p.12) showed that male teachers tend to share

their knowledge more than their female counterparts and first degree holders were found to share their knowledge more than Higher National Diploma holders. However, others Ismail and Yusof (2009, p.21); Mogotsi et al., (2011, p23) found no relationship between demographic variables and knowledge sharing behaviour. Ismail and Yusof (2009,p.15) showed that demographic factors appear not to be key determinants of knowledge sharing behaviour. Mogotsi et al. (2011,p.24) showed that

no statistical significant relationship between knowledge sharing and gender, age or professional tenure.

Knowledge sharing processes can be conceived as the processes through which employees mutually exchange knowledge and jointly create new knowledge Van den Hooff and Van Weenen (2004a,p.325). Ardichvill et al. (2003, p.25) discussed knowledge sharing as involving both the supply and the demand for new knowledge. Van den Hooff and Van Weenen (2004b, p.257) identified a two-dimension of knowledge sharing process that consists of knowledge donating and knowledge collecting. Knowledge donating can be defined as the process of individuals communicating their personal intellectual

capital to others, while knowledge collecting can be defined as the process of consulting colleagues to encourage them to share their intellectual capital. This study will focus on understanding the relationship between two forms of knowledge sharing behaviour and demographic variables in some telecommunication companies.

RESEARCH METHOD

Survey questionnaires used to collect data from the selected departments in the telecommunication companies. The questionnaire consists of two sections and is formed on the basis of inheritance scale variables were used in the previous studies. Section one comprises items measuring the factors using a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The four-item knowledge donation and six-item knowledge collection were adapted from the studies of Lin (2007,p.451) and Zahra and Mohammad (2010,p.316). Section two comprises personal information of the respondents such as gender, age, educational qualification and work experience. All these adapted items for these constructs are detailed in Table 1.

Table 1. Factors and Their Items

| Factors | Items | Symbol |
|---------------------------|-----------------------------------------------------------------------------------------------|--------|
| Knowledge donation (Do) | When I learn something new, I tell my colleagues about it | Do1 |
| | I share the knowledge I have, with my colleagues | Do2 |
| | I think it is important that my colleagues know what I am doing | Do3 |
| | I regularly tell my colleagues what I am doing | Do4 |
| Knowledge collection (Co) | When I need certain knowledge, I ask my colleagues about it | Co1 |
| | I like to be informed of what my colleagues know | Co2 |
| | I ask my colleagues about their abilities when I need to learn something | Co3 |
| | When one of my colleagues is good at something I ask him/her to teach me how to do that thing | Co4 |

Source: Dao Thi Dai Trang (2016)

Respondents are employees in some telecommunication companies such as Viettel Telecom, Vinaphone, Mobifone, FPT in Hanoi, Hai Duong, Hoa Binh, Da Nang and Ho Chi Minh. These employees are working at some departments which relate to research and development, technology. The authors investigated through questionnaires sent directly and via the Internet (email, social networks and forums) thanks to google docs tool. Time to collect data was from April to June 2015. The results were 83 direct and 178 online questionnaires. After screening the invalid questionnaires due to lack of information and unreliability, the authors collected 234 valid questionnaires to use for analysis.

The demographic characteristics of the sample are presented in Table 2. It is important to be able to identify and understand the demographic and personal profile of respondents because respondents' backgrounds tend to impact on their perspectives about particular subject.

1. *The gender of the respondents:* 69,23% questionnaire was answered by men; 30,77 % of questionnaire was answered by women. This difference due to employees in the telecommunication companies, in divisions such as research and development or technical research survey conducted mostly men.
2. *Regarding the age of the respondents:* 56,84 % respondents aged 20-30 years old; 43,16% of subjects remaining respondents aged 31-45 years old. No respondent is beyond the age of over.
3. *Regarding education level of respondents:* 9,4% of respondents finished professional secondary school; 75,21% of respondents ha-

ve qualified College/ University; the remaining 15,39% of respondents had postgraduate qualifications.

4. *On work experience of the respondents:* 9,4% of respondents have experience working under 1 year; 20,94% of respondents have work experience from 1-5 years; 42,3% of respondents have experience working from 6-10 years; 23,5% of respondents have work experience from 11-15 years. Of the 234 valid questionnaire, 3,86% of respondents have experience working under 1 year or over 15 years.

Data were analysed using multiple regression at the 95 per cent significance level. The general model used in establishing the relationship between knowledge sharing behaviour (KSB) and the demographic variables was: $KSB = K + gender(x_a) + age(x_b) + educational\ qualification(x_c) + work\ experience(x_d)$, where K is the constant, and x_a , x_b , x_c and x_d are the co-efficients of the independent variables.

The dependent variable is knowledge sharing behaviour and the independent variables are gender, age, educational qualification and working experience. Dummies were created because the independent variables were categorical variables. For gender, male was used as the reference point, while from 31 to 45 years old was used as the reference point for age. Professional secondary school was used as the reference point for educational qualification and under 1 year was used as the reference point for work experience. These reference points provided a basis for within-group comparisons of the independent variables on knowledge sharing behaviour.

Table 2. Characteristics of The Sample

| Category | Number of respondents | Percentages |
|-----------------------------------|-----------------------|-------------|
| <i>Gender</i> | 234 | 100 |
| Male | 162 | 69,23 |
| Female | 72 | 30,77 |
| <i>Age</i> | 234 | 100 |
| Under 20 | 0 | 0 |
| From 20 to 30 | 133 | 56,84 |
| From 31 to 45 | 101 | 43,16 |
| From 46 to 60 | 0 | 0 |
| Over 60 | 0 | 0 |
| <i>Educational qualification</i> | 234 | 100 |
| Lower secondary educational level | 0 | 0 |
| Upper secondary educational level | 0 | 0 |
| Professional secondary school | 22 | 9,4 |
| Graduate | 176 | 75,21 |
| Postgraduate | 36 | 15,39 |
| <i>Work experience</i> | 234 | 100 |
| Under 1 year | 22 | 9,4 |
| From 1 to 5 years | 49 | 20,94 |
| From 6 to 10 years | 99 | 42,3 |
| From 11 to 15 years | 55 | 23,5 |
| Over 15 years | 9 | 3,86 |

Source: Dao Thi Dai Trang (2016)

RESULTS AND DISCUSSION

Effect of demographic variables in knowledge sharing behaviour was analyzed for knowledge donating and knowledge collecting which are two forms of knowledge sharing behaviour. Firstly, the results of knowledge donating are described as follows in Table 3.

The R square value in the model summary depicts the degree to which the independent variables explain the variation in knowledge donating. From

Table 3, it can be observed that the R square value is 0,213, which indicates that gender, age, educational qualification and working experience accounts 21,3 per cent for the factors influencing knowledge donating among staffs of telecommunication companies. Although, this seems to be small, but it is significant ($F = 4,914$, Probability = 0,000, $p < 0,05$). Thus, the model was robust and significant in establishing the relationship between knowledge donating and the demographic variables.

Table 3. Test Significance of The Regression Model for Knowledge Donating and Demographic Variables

| R | R ² | Adjusted R ² | Standard error of the estimate | F-statistics | Significance |
|-------|----------------|-------------------------|--------------------------------|--------------|--------------|
| 0,462 | 0,213 | 0,170 | 0,911 | 4,914 | 0,000 |

Source: Dao Thi Dai Trang (2016)

Table 4. Regression Results for The Relationship between Knowledge Donating and Demographic Variables

| Predictor variables | β | Standard error | Beta | t-statistic | Significance |
|----------------------------------------|---------|----------------|--------|-------------|--------------|
| (Constant) | 3,252 | 1,059 | | 3,073 | 0,003 |
| Dummy female | -0,322 | 0,171 | -0,152 | -1,883 | 0,002 |
| Dummy age 20-30 years | -0,899 | 0,219 | -0,442 | -4,100 | 0,000 |
| Dummy qualification graduate | -1,271 | 0,427 | -0,499 | -2,976 | 0,103 |
| Dummy qualification postgraduate | -0,766 | 0,464 | -0,279 | -1,652 | 0,101 |
| Dummy working experience 1-5 years | -0,979 | 0,926 | -0,452 | -1,057 | 0,292 |
| Dummy working experience 6-10 years | -1,394 | 0,928 | -0,698 | -1,501 | 0,135 |
| Dummy working experience 11-15 years | -2,302 | 0,957 | -0,948 | -2,406 | 0,117 |
| Dummy working experience over 15 years | -2,108 | 1,329 | -0,170 | -1,586 | 0,115 |

Source: Dao Thi Dai Trang (2016)

The following linear regression model indicates how the independent variables (gender, age, educational qualification and working experience) were used to determine knowledge donating. The regression model is:

$$KSB(1) = 3,252 - 0,322DM - 0,899DA - 1,271DE1 - 0,766DE2 - 0,979DW1 - 1,394DW2 - 2,302DW3 - 2,108DW4$$

The estimated model indicates the extent to which each of the demographic variables influences knowledge donating and the variations among the various categories of the respondents' gender, age, educational qualification and working experience. From Table 4 can be observed that the variation in knowledge donating among females and males is -0,322 meaning that males share their knowledge more than females ($\beta = -0,322$, Probability = 0,002, $p < 0,05$). It also shows that gender

influences knowledge donating among staffs and the female staffs do not share their knowledge as much as their male counterparts. Additionally, it was showed that staffs aged from 31 to 45 tend to share their knowledge more than those aged from 20 to 30, and this was found to be significant ($\beta = -0,899$, Probability = 0,000, $p < 0,05$). Secondly, the results of knowledge collecting are described as follows.

From Table 5, it can be showed that the R square value is 0,133, which indicates that gender, age, educational qualification and working experience accounts 13,3 per cent for the factors influencing knowledge collecting among staffs of telecommunication companies with $F = 2,769$, Probability = 0,007, $p < 0,05$). Therefore, the model was robust and significant in establishing the relationship between knowledge collecting and the demographic variables.

Table 5. Test Significance of The Regression Model for Knowledge Collecting and Demographic Variables

| R | R ² | Adjusted R ² | Standard error of the estimate | F-statistics | Significance |
|-------|----------------|-------------------------|--------------------------------|--------------|--------------|
| 0,364 | 0,133 | 0,085 | 0,956 | 2,769 | 0,007 |

Source: Dao Thi Dai Trang (2016)

Table 6. Regression Results for The Relationship between Knowledge Collecting and Demographic Variables

| Predictor variables β | | Standard error | Beta | t-statistic | Significance |
|----------------------------------------|--------|----------------|--------|-------------|--------------|
| (Constant) | 0,774 | 1,112 | | 0,696 | 0,487 |
| Dummy female | -0,105 | 0,180 | -0,049 | -0,582 | 0,561 |
| Dummy age 20-30 years | 0,531 | 0,230 | 0,261 | 2,304 | 0,023 |
| Dummy qualification graduate | 0,399 | 0,449 | 0,157 | 0,889 | 0,375 |
| Dummy qualification postgraduate | 0,494 | 0,487 | 0,180 | 1,014 | 0,312 |
| Dummy working experience 1-5 years | -2,012 | 0,972 | -0,930 | -2,070 | 0,060 |
| Dummy working experience 6-10 years | -1,413 | 0,975 | -0,707 | -1,449 | 0,149 |
| Dummy working experience 11-15 years | -0,844 | 1,005 | -0,348 | -0,840 | 0,402 |
| Dummy working experience over 15 years | -0,239 | 1,396 | -0,019 | -0,172 | 0,864 |

Source: Dao Thi Dai Trang (2016)

The following linear regression model indicates how the independent variables (gender, age, educational qualification and working experience) were used to determine knowledge collecting. The regression model is:

$$KSB(2) = 0,774 - 0,105DM + 0,531DA + 0,399DE1 + 0,494DE2 - 2,012DW1 - 1,413DW2 - 0,844DW3 - 0,239DW4$$

Table 6 also describes that the variation in knowledge collecting among 20-30 and 31-45 year old staffs is 0,531 meaning that 20-30 year old staffs collect knowledge more than 31-45 year old staffs ($\beta = 0,531$, Probability = 0,023, $p < 0,05$).

CONCLUSION

Previous studies indicated that there were mix results on the relationship between demographic factors and knowledge sharing. The findings of this study show that male staffs tend to share their knowledge more than their female counterparts. The findings are rather more consistent with Pangil and Nasrudin

(2008,p.24), who revealed that there is a variation in knowledge sharing among females and males, although they were not emphatic. The findings also support the study of Boateng et al. (2015,p.19) when the authors researched senior high school teachers about knowledge sharing. However, this study does not support Lin (2007,p.12), whose study had established that females were more likely to share their knowledge than males. However, finding also contrasts Elsass and Graves' (1997,p.14) view that females exhibit higher instrumental exchange and, for that matter, knowledge sharing than males. The implication of these findings is that male staffs are likely to perform better than female counterparts and also that they are more likely to contribute to organisational performance than females, as knowledge sharing can improve both individual and organisational performance McKeen et al., (2006,p.34); Mogotsi et al., (2011,p.23).

Furthermore, this study also show that staffs aged from 31 to 45 tend to share their knowledge more than those aged from 20 to 30 while 20-30 year old staffs tend to collect knowledge more

than 31-45 year old staffs. This is supported by a study by Gumus (2007) which indicated that there were significant differences between age groups concerning knowledge donating and collecting. Therefore, managers in telecommunication companies should have appropriate policies for the two age groups to promote knowledge sharing behaviour.

There were a few shortcomings in this study as follows:

- There were more male participants than females, which might have influenced the findings.
- This study did not consider other demographic factors such as departments, religion or ethnic group.
- The results of the study do not show significant relationship between demographic factors and knowledge sharing quality.

Future studies should consider using equal numbers of males and females to avoid the difference of gender and other demographic variables. Additionally, it is recommended that a more comprehensive study should be done to see some insights of the impact of demography on knowledge sharing quality among employees.

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