The Influence of Prestige in Innovation Adoption

Rini Hutahaean¹, Ruth Natalie Cristine¹, Putri Sentosa Sitompul¹, Frederick Situmeang¹, Ricardo Situmeang¹

¹Del Institute of Technology, School of Engineering Management, Indonesia
²Amsterdam Business School, University of Amsterdam, Plantage Muidergracht 12, 1018TV, Amsterdam, The Netherlands

Abstract. Technology is one type of Digital Business Innovation (DBI) that could prove people to adopt the innovation. Based on previous research, there are some factors toward innovation that could affect adoption of innovation which are organizational factors, individual factors, social influence, and demographic. Through this research, attitudes toward innovation may be divided into three types beliefs, affects, and prestige. The purpose of this study is to develop previous research and test the hypothesis what could give positive influence in innovation adoption and to provide a new theoretical framework that addresses the adoption decision by respondents. This study is based on the sample of 222 respondents who answered questionnaire on is application based transport (driver). After data collection, the data were processed with SPSS's (Statistical Product and Service Solution) Software and to obtain by Pearson Correlation, Analysis of Variance (ANOVA), and Regressions to test the proposed enhanced model. Finally, theoretical and practical implications are discussed.

1. Introduction

Innovation is one of the factors that drive the success of a business (Cardozo, McLaughlin, Harmon, Reynolds, & Miller, 1993). Innovation contributes to the expansion of product marketing (Hurley & Hult, 1998). Marketers that use innovations in their products must be able to ensure that the innovation can be marketed. Thus, in order for marketers to be successful in bringing innovation to market, it need to be understood the factors that influence the decision of any customers to adopt innovation or not (Frambach & Schillewaert, 2002).

These last few decades, the knowledge about determinants of success in adopting an innovation increased significantly (Frambach & Schillewaert, 2002). Determinants in adopting innovation refer to individual decisions to adopt the innovation (Rogers, 1995). The decision to adopt innovations happens when individuals are become aware that they can gain certain value by adopting the innovation (Gopalakrishnan & Damanpour, 1994). Digital business is one type innovation, defined as how businesses apply Information, Communication, and Technology (ICT) to improve the competitiveness of their organization through optimizing internal processes with online and traditional channels to market and supply (Chaffey, 2014). Digital innovations may influence perceptions that arise as a result of the different ways in which marketers carry out their business. Originally, marketers would operate in a conventional way by peddling products to consumers, while with digital innovations, companies offer products to consumers through information and communication media. People's perceptions of
working with digital businesses would arguably increase the prestige of the profession, which then affects one's own feelings about his job (Kadushin, 1958).

Everyone who works in fast moving digital business, especially in an application based industry such as application based transport, would arguably have higher prestige than conventional based transport. As we know, the people who work in the application based industry do not need a place to sell their product directly to the customer. People who work with on the digital business are people who understand technology, an educated person, but not he/she does not have to be a highly educated. A driver that works with digital business is no longer a driver but instead a digital business employee. This will change the prestige of a driver.

This research aims to investigate how the transformation of the conventional based occupation to digital based occupation might influence perceptions and prestige of the workers. This research uses theories in the context of the adoption of innovation in particular within digital business. This research helps to build the framework of analysis in the context of innovation. This research examines the current marketing trends. More and more marketers develop digital business, but cannot confirm whether the perception of many people of the innovation makes them want to adopt an innovation. Marketers can utilize this research to know about the perception of the masses about their innovations

2. Literature Review

Innovation

Innovation is a process of change in organizations and a key weapon that marketing strategists use to win customers and markets by using technology to develop a new product that hopefully can help people (Drucker, 1954). The advantage of innovation is that it may build organizational capabilities along with the co-creation of value with the customer, with adequate adaptations to mindsets, skills, efficient, resilient business processes and focused analytics (Prahalad & Krishnan, 2008). Innovation is driven by customer and market requirements which are shaped by the evolution of technology (Adner & Levinthal, 2001). Innovation should provide the creation and exploitation of value, providing the value has built in ‘newness' or ‘differences' in products, processes, technologies, methods and business models. A central finding of this research relevant to marketing is that it explains innovation, and this could change people’s perspective in adopting the innovation.

Adoption of Innovation

Frambach and Schillewaert stated that if innovation is extended then the level of customer anxiety increases so that, the number of people who adopted the innovation would decrease (Frambach & Schillewaert, 1999). The research has shown that five perceived innovation characteristics influence the adoption decision, i.e., the relative advantage, compatibility, complexity, observability, and trialability (Robinson, 1990). First, relative advantage, the best predictor of extending adoption that refers to the potential adopter perceiving an innovation superior to alternatives product, service, or concept (Rogers, 1995). This would imply that the innovation is adopted by the company only if it offered some economic benefit to the company (Rogers, 1995). Second, compatibility had a positive influence on the acceptance of the innovation (Rogers, 1995). Third, complexity, the extent to which the innovation can be implemented on a limited basis, the intellectual difficulty associated with understanding the innovation, and the extent of the newness of the innovation (Rogers, 1995). The disadvantage of complexity that it negatively affects speed and probability its adoption (Rogers, 1995). Fourth, observability, the extent to which the results of an innovation are visible to others (Rogers, 1995). Fifth, trialability, the extent to which an innovation can be tried out on a limited scale (Rogers, 1995). In other words, trialability is more important for innovators and early adopters because they know from the early innovators how effective the innovation is (Rogers, 1995).

A high level of uncertainty distinguishes three types of uncertainty: (1) technical uncertainty: the extent which the potential adopter determines how reliable an innovation and beneficial is (Gatignon & Robertson, 1985). (2) Financial uncertainty: the extent to the potential adopter that the implementation
of the innovation would not bring any unexpected cost (Gatignon & Robertson, 1985). (3) Social uncertainty: the extent that what conflict would occur in the immediate environment of the potential adopter that should be regard to the purchase and implementation of an innovation (Frambach & Schillewaert, 1999).

According to Talukder (2008), the conceptual framework of individual innovation acceptance by Frambach and Schillewaert (2002) argues that individual acceptance of innovation is based on perceived belief and affects held towards the focal innovation (Talukder, Harris, & Mapunda, 2008). Frambach and Schillewaert’s model indicates that individual usage an innovation does not only depend on attitudes but also on management strategies, policies, and actions; and these factors include training, social persuasion and organizational support. However, Talukder has developed the model by combining the Theory of Reasoned Action (Ajzen & Fishbein, 1980) and The Technology Acceptance Model (Davis, 1989) and the conceptual framework of individual innovation acceptance by (Frambach & Schillewaert, 2002). Figure 1 presents the proposed enhanced research model of innovation adoption (Talukder, Harris, & Mapunda, 2008).

![Diagram](image.png)

**Figure 1.** Enhanced model of innovation adoption by Talukder (2008)

Based on the previous research, this paper will explain the differences between the old and improvement practice. To enhance the knowledge by Talukder, the new thing that will be discussed is prestige. The aim is that there is a modification of new knowledge that needs to be investigated to its accuracy. To test the role prestige, this paper is going to focus on the implementation on Digital Business Innovations (DBI) through, opening up new jobs for people who do not have a steady job. In fact, some jobs that many people previously considered for the middle to lower be currently mostly done by the middle class and above. For example is an online taxi driver who uses DBI as his permanent occupation. Figure 2 describes the enhanced model of innovation adoption.
Figure 2. Enhance model of innovations adoption

Digital Business Innovations

Macro trends in technology enabled business may take years, no change or even sometimes decades to play out. That is the history of ERP, MRP, start up (e-commerce), and other advancements, and it will be true of DBI. There is a need to explore the fundamental nature and extent of the idea. We need to define what it is, how it works and how it creates new value for our businesses (Raskino, LeHong, & Schehibenreif, 2015). DBI has a potential’s power to change business models. For example, application based transport enables passengers to book the service by an application on a smartphone, while before digital business, the taxi drivers find their customers in the regular way, the customer will find the taxi on a street or book it by telephone. This fact leads to the fact that only people who can use technology to both the application based transport and customers. So that, this situation would increase the prestige of digital business employee (application based transport). In previous research, prestige has never been discussed. So, the purpose of this study is to see how big the impact of prestige is on DBI with the adoption of innovation.

Application Based Transportation

In recent years, advances in information and communication technology have enabled new services that provide a wide variety of real time and demand responsive trips (Rayle, Shaheen, Chan, Dai, & Cervero, 2014). Companies such as Uber, Lyft, Sidecar (companies’ example in California), Gojek, Grabcar (companies’ example in Indonesia) that also known as Application Based Transportation or Transportation Network Companies (TNCs) have emerged offering smartphone application which one type of Digital Business Application to link riders with community drivers (Rayle, Shaheen, Chan, Dai, & Cervero, 2014). Passengers request a ride from a private passenger vehicle driven by a (usually) non-commercially licensed driver through the mobile application, which then communicates the passenger’s location to application based transport (driver) via GPS (Global Positioning System) (Rayle, Shaheen, Chan, Dai, & Cervero, 2014). These application charge a distance-variable fare, approximately 80% of which goes to the application based transport, with the remaining to the company’s service (Rayle, Shaheen, Chan, Dai, & Cervero, 2014). Many of these applications maintain a rating system that allows for application based transports and passengers to rate each other after the trip completed (Rayle, Shaheen, Chan, Dai, & Cervero, 2014).

Occupational Prestige

Prestige corresponds to one major area of psychological causation, with accompanying characteristic ethological displays and emergent sociological phenomena. Prestige can also be interpreted as widespread respect and admiration felt for someone or something on the basis of a perception of their achievements or quality (Gill-White & Henrich, 1998).
An occupation refers to the kind of work performed in a job. The concept of occupation is defined as a "set of jobs whose main task and duties are characterized by a high degree of similarity". A person may be associated with an occupation through the main job currently held, a second job, a future job or a job previously held (International Standard Classification of Occupations (ISO-08), 2012). If we connect prestige with occupation, knowledge and skill are, perhaps, the most accepted determinants of such prestige, but income, difficulty of training, intelligence required, and the occupation’s overall value to society, must also be viewed as significant contributing factors (Euster, 1980). The research about occupational prestige has been conducted since 1947 by the National Opinion Research Center (NORC). The studies told us that welfare workers ranked in prestige about the same as policemen, undertakers, newspaper columnists, drivers, and farm owners, but considerably lower than professors, psychologists, and public school teachers (Euster, 1980).

Based on Carmen's Journal of Measuring Occupational Prestige in Romania, conventional drivers got rank 18 from 38 occupations, the categories to measure the rank are knowledge resulted from studies, professional experience, and knowledge resulted from an elevated level of intelligence (Buzea & Scarneci, 2011). Another journal said that occupational prestige appears to reflect respondents' perception associated with an occupation, including education level required for entry, income earned, power, authority, and responsibility deviated from that position (Quine & Lancaster, 1986). Many occupations need a level of it is enough to high enough education, whereas the work of an application based transport does not need to require higher education simply understand the applications and to drive a vehicle only. Therefore, the presence of DBI can through raise the prestige of the people if they adopt DBI. Here are the hypotheses which we suggest before conducting this research:

1. H0: Digital business does is not related prestige
2. H1: There is an alteration in the prestige of someone after adopting DBI

3. Methodology

The study examined the use of technology or DBI from application based transport. There are some factors in using DBI to show and test that prestige influence to adopt the innovation technology, they are income before and after adopt DBI, innovativeness before and after adopt DBI, and self perceptions before adopt DBI. The respondents were application based transport in Medan, North Sumatra. Data were collected using survey questionnaire paper directly to the application based transport and distribute the survey using Survey Monkey to social media. The primary procedure to collect the data for this study is an online survey questionnaires, direct observations and interview the object of this study. Finally, a total of 222 usable data points were collected. Data analyzed using Pearson Correlation, ANOVA, and Regressions. The questioner based on the research model described earlier in this paper and includes questions designed to measure the respondents’ identity by asking their last education, vehicle type, and ever be a driver conventional and to measure prestige by asking their income before and after using DBI and 4 points response scale (very disagree, disagree, agree, and very agree) for asking innovativeness before and after using DBI and their’s thought of people perception before he/she using DBI. This study was conducted in Medan, which is one of the biggest city in Indonesia (capital city of North Sumatra). Table 1 shows the frequency table for respondent’s identity.

| Respondent’s Vehicle | Frequency | Percent | Valid Percent | Cumulative Percent |
|----------------------|-----------|---------|---------------|--------------------|
| Car                  | 74        | 33.3    | 33.3          | 33.3               |
| Motorcycle           | 148       | 66.7    | 66.7          | 100.0              |
| Total                | 222       | 100.0   | 100.0         |                    |
The first stage of designing the questionnaire was to obtain business expert's opinions and comments regarding the questionnaire, sentence, and structure which relevant to the type of questions of the questionnaire. This study was followed by pilot studies in which the research was pretested to identify and modify the factors which the respondents (application based transport) tended to misinterpret, skip over or answer properly. The aim of this study was to examine the validity and the reliability of the factors.

To test the proposed model, linear regression analysis was performed. Linear regression analysis was used to analyzed the linear relationship between a dependent variable Y (prestige) and independent variables X (income before, innovativeness before, self perceptions before, income after, innovativeness after) (Schneider, Hommel, & Bletter, 2010). Every independent variable was weighted by the regression analysis to ensure a maximal prediction from the set of independent variables. The weights denote the relative contribution of the independent variables to the overall prediction and facilitate interpretation as to the influence of each variable in making a prediction. The set of weighted independent variables will form the regression variate, a linear combination of the independent variables that best predict the dependent variable (Hair, Anderson, Taham, & Black, 1998).

4. Results
The results show that percentage of the variance in individual acceptance or usage that can be explained by income, education, experience, and enjoyment with innovation. The Pearson Correlation statistic shows that there is no problem regarding autocorrelation. The table shows the result that the model is significant, it means there is a positive influence of prestige to DBI. From the data collection, it can be concluded that the model is increase significantly ($p < 0.001$). Table 2 shows the results of Pearson Correlation of this study and table 3 shows the results of analysis of variance (ANOVA) test.
Table 2. Pearson Correlation of this study

| Correlations | Respondent's income before using DBI | Respondent's innovativeness before using DBI | People perception to respondent before using DBI | Respondent's income after using DBI | Respondent's innovativeness after using DBI | Respondent's prestige after using DBI |
|--------------|--------------------------------------|---------------------------------------------|-----------------------------------------------|------------------------------------|-----------------------------------------------|----------------------------------------|
| Respondent's income before using DBI | Pearson Correlation | 1 | .171 | .066 | .306** | .191** | .073 |
| | Sig (2-tailed) | | | | | | |
| | N | 222 | 222 | 222 | 222 | 222 |
| Respondent's innovativeness before using DBI | Pearson Correlation | .171 | 1 | .062 | .213* | .186 | .129 |
| | Sig (2-tailed) | .011 | | | | | |
| | N | 222 | 222 | 222 | 222 | 222 |
| People perception to respondent before using DBI | Pearson Correlation | .066 | .062 | 1 | .221** | .146 | .491 |
| | Sig (2-tailed) | | | | | | |
| | N | 222 | 222 | 222 | 222 | 222 |
| Respondent's income after using DBI | Pearson Correlation | .306* | .213* | .221* | 1 | .326 | .394 |
| | Sig (2-tailed) | .000 | .001 | .001 | | | |
| | N | 222 | 222 | 222 | 222 | 222 |
| Respondent's innovativeness after using DBI | Pearson Correlation | .181 | .186 | .149 | .326 | 1 | .226 |
| | Sig (2-tailed) | .007 | .006 | .027 | | | |
| | N | 221 | 221 | 221 | 221 | 221 |
| Respondent's prestige after using DBI | Pearson Correlation | .073 | .129 | .491* | .334* | .226 | 1 |
| | Sig (2-tailed) | .278 | .054 | | | | |
| | N | 222 | 222 | 222 | 222 | 222 |

*Correlation is significant at the 0.05 level (2-tailed).
**Correlation is significant at the 0.01 level (2-tailed).

Table 3. ANOVA test of this study

| ANOVAa | Model | Sum of Squares | df | Mean Square | F | Sig |
|--------|-------|----------------|----|-------------|---|-----|
|        | 1. Regression | 15.155 | 5 | 3.031 | 18.956 | 000b |
|        | Residual | 34.378 | 215 | 160 | | |
|        | Total | 49.534 | 220 | | | |

a. Dependent Variable: Respondent’s prestige after using DBI
b. Predictors: (Constant), Respondent’s innovativeness after using DBI, People perception to respondent before using DBI, Respondent’s income before using DBI, respondent’s innovativeness before using DBI, Respondent’s income using DBI

This model shows respondent’s prestige after using DBI with (N(222) = .732, p < 0.465); Respondent’s innovativeness before be an application based transport (N(222) = .819, p < 0.414); people perception to respondent before using DBI (N(222) = 7.354, p < 0.001); respondent’s after using DBI (N(222) = 3.321, p < 0.001); respondent’s innovativeness after using DBI (N(222) = 1.504, p < 0.134) are all significant predictors of driver or individual acceptance of DBI. From the magnitude of the betastatistics, the table shows the perceived people perception to respondent before using DBI has a higher impact, followed by respondent’s income after using DBI, respondent’s innovativeness after using DBI, respondent’s innovativeness before an application based transport and respondent’s prestige after using DBI. It emerges that people perception to respondent before using DBI is more important factor followed by respondent’s income after using DBI and respondent’s innovativeness after using DBI. The result of regression analysis is shown in Table 4.
Table 4. Linear Regression of this study

| Model                          | Unstandardized Coefficients | Standardized Coefficients | t     | Sig.  |
|-------------------------------|----------------------------|---------------------------|-------|-------|
|                               | B  | Std.Error | Beta |       |       |
| 1.(Constant)                  | .754 | .325     |      | 2.321 | .021  |
| Responden’s income before using DBI | -.041 | .055   | -.044 | -.732 | .465  |
| Responden’s innovativeness before using DBI | .057 | .070 | .048 | .819 | .414  |
| People perceptions to responden before using DBI | .400 | .054 | .430 | 7.354 | .000  |
| Responden’s income after using DBI | .182 | .055 | .212 | 3.321 | .001  |
| Responden’s innovativeness after using DBI | .113 | .075 | .092 | 1.504 | .134  |

a. Dependent Variable: WTB

5. Discussion and Conclusion

According to this research study, it can be found that there is an alteration in the prestige of someone after adopting DBI, especially in application based transport's occupation. There are some other factors to adopt the innovation adoption, based on Frambarg (2002) and Talukder (2008). This study does not reject the previous research but, develops and expands the knowledge about technology acceptance in DBI.

To prove the prestige in DBI, this study involves some statement from the questionnaire about people perception before and after the use of DBI. In this case, this enhanced model can remain for a long time testing technology acceptance and adoption because as the prestige emerges in future, it could be added and fitted into the box identified as prestige and test it in any DBI anywhere in the world.

The finding encourages every organization who adopt DBI to develop or make an improvement to make the positive value of respondent’s prestige after DBI. The organization needs to design strategy and other education programs that motivate and influence conventional driver to adopt and use DBI as their occupation to increase the innovation adoption rate of DBI.

This study still not complex and has a number of limitations. The research's location only in one city, Medan. Probably, this type of data might be prone to certain types of biases such as education background, type of vehicles, be ever a conventional driver. The results could be different if the study had not only been conducted in one city or country because other factors like culture, personal
characteristics, social influence, demographics, organizational factors, etc based on Frambargh (2002) and Talukder (2008) were shown to be relevant as well.

References

[1] Adner, R., & Levinthal, D. (2001). Demand Heterogeneity and Technology Adoption: Theories and Trends. Information Seeking Behaviour and Technology Adoption.
[2] Ajzen, I., & Fishbein, M. (1980). Information Seeking Behaviour and Technology Adoption: Theories and Trends . Information Seeking Behaviour and Technology Adoption.
[3] Buzea, C., & Scarneci, F. (2011). MEasuring Occupational Prestige in Romania. Legal Practice and International Laws, 1-6.
[4] Cardozo, R., McLaughlin, K., Harmon, B., Reynolds, P., & Miller, B. (1993). Product - Market Choicesand Growth of New Business. Journal of Product Innovation Management, 331340.
[5] Chaffey, D. (2014). Digital Business and E-commerce Management . Person Higher Ed.
[6] Davis, F. (1989). Perceived Usefulness, Perceived Case of Use, and User Acceptance of Information Technology . 319-340.
[7] Drucker, P. F. (1954). The Practice of Management.
[8] Euster. (1980). The Occupational Prestige of Social Network. The Journal of Sociology & Social Welfare, 1-13. Frambach, R., & Schillewaert, N. (1999). Organizational Innovation Adoption: A Multi-Level Framework of Determinants. The Journal of Business Research, 1-41.
[9] Frambach, R., & Schillewaert, N. (2002). Organizational Innovation Adoption: A Multilevel Framework of Determinants and Opportunities for Future Research. Journal of Business Research, 163-176.
[10] Gatignon, H., & Robertson, T. S. (1985). A Propositional Inventory for New Diffusion Research. Journal of Consumer Research, 4254.
[11] Gill-White, F. J., & Henrich, J. (1998). The Evolution of Prestige. 1107.
[12] Gopalakrishnan, S., & Damanpour, F. (1994). Patterns of Generation and Adoption of Innovation in Organizations : Contingency Models of Innovation Attributes . Journal of Engineering and Technology Management, 95-116.
[13] Hair, Anderson, Taham, & Black. (1998). Multivariate Data Analysis. Hurley, R., & Hult, T. (1998). Innovation, Market Orientation, and Organizational Learning: An Intergration and Empirical Examination. Journal of Marketing, 42-54.
[14] International Standart Classification of Occupations (ISO-08). (2012).
[15] Kadushin , A. (1958). Prestige of Social Work - Facts and Factors. Social Work, 37.
[16] Prahalad, C., & Krisnan, M. (2008). The new age of Innovation : Driving Cocreated Value Through Global Networks.
[17] Quine, S., & Lancaster, P. (1986). Indicators of Social Class - Relationship Between Prestige of Occupation.
[18] Raskino, M., LeHong, H., & Schehibenreif, D. (2015). Fifty Examples of Digital Business: A CIO and CEO Resource. 1-29.
[19] Rayle, L., Shaheen, S., Chan, N., Dai, D., & Cervero, R. (2014). AppBased, On-Demand Ride Services: Comparing Taxi and Ridesourcing Trips and User Characteristics in San Francisco. UCTC Working Paper.
[20] Robinson, W. (1990). Product Innovation and Start-Up Business Market Share Performance . Management Science. Rogers, E. (1995). Diffusion of Innovation.
[21] Schneider, A., Hommel, G., & Bletter, M. (2010). Linear Regression Analysis . Medicine, 776-820.
[22] Talukder, M., Harris, H., & Mapunda, G. (2008). Adoption of Innovations by Individuals within Organizations; An Australian Study. 463-480.