

Service Design of Motor Vehicle Tax Service in West Java Province

A Design Approach towards the Digital Service Update of West Java Regional Revenue Agency

Yannes Martinus Pasaribu^{1,*}, Slamet Riyadi², Damang Sarumpaet³

¹Institute of Technology Bandung, Indonesia

²Institute of Technology Bandung, Indonesia

³Institute of Technology Science Bandung, Indonesia

*Corresponding author. Email: ergolib@gmail.com

ABSTRACT

Motor vehicle tax is an important source of regional cash income. In 2017, the Regional Government of West Java Province created digital-based community service design innovations to improve the quality of its tax services. However, until 2020 it only saw 6.28% of 16,085,120 registered motor vehicles, presumably because they missed the community's preferences as clients and users. This research is important to improve the digital service design development strategy further so that people can better be prepared to migrate to digital service design. The research method used is mixed methods focusing on the community's user experience from ethnographic aspects in using digital technology for tax services created by the government. The field research was carried out through observations, interviews and questionnaires to identify the effectiveness and efficiency of the current tax services, as well as public habits and expectations of motor vehicle tax services. The current situation that has been developing in the community towards the tax payment service was then reviewed. From the preliminary research conducted, it was found that the problem with service design failure is that it misses the users' experience and ethnographic aspects of the community as end users and clients. Therefore, before updating its service design, West Java Regional Revenue Agency needs to make a comprehensive study of the latest state of the users' experience and ethnography, especially regarding ecosystem readiness and the various levels of public acceptance of service design innovations. This research on Vehicle Tax Payment Service Systems in West Java Province is expected to provide several recommendations for a mixed strategy between users' experience and design ethnography in the development of the next digital motor vehicle tax service design innovation. Thus, the West Java Regional Revenue Agency can have a baseline for an inclusive service design strategy based on local culture.

Keywords: *Digital Technology, Service Design, Design Ethnography.*

1. INTRODUCTION

Motor Vehicle Tax (PKB) is a significant source of regional cash income to finance routine expenditures and development of West Java Province. However, until now there are still a lot of taxpayers (WP) who do not comply with their obligations in paying taxes even though various rules and legal sanctions against violators have been implemented. Tax avoidance and evasion are a form of non-compliance commonly done by WP. This

action affects the increasing number of Re-Registration of New Vehicles and Unpaid Tax Vehicles (KBMBU – KTMDU), hence reducing tax revenues.

One of the efforts of the Regional Revenue Agency (*Bapenda*) of West Java Province to increase its income is through the development of a number of digital-based public service innovations that aim to meet the needs and expectations of the community in paying Motor Vehicle Tax (PKB). In addition to enabling the creation of efficiency, effectiveness,

quality and accountability of service functions and administrative systems, the use of information and communication technology (ICT) in digital services also opens up opportunities for service product innovations, methods, and most importantly the creation of new values and work culture in the One-Stop Administration System (SAMSAT) of Bapenda of West Java province. From the community side as users, this form of digital service can also provide convenience and comfort in paying taxes.

The research question is that with the development of a digital-based tax service system that is short, fast, effective and efficient, then there should be an increase in tax collection. However, in reality, the number of vehicle owners who do not pay taxes increases from year to year despite all the efforts. Based on the data from Bapenda there has been an increase in the trend of non-paying tax vehicle owners in the period of 2014 -2017. Initially, it reached 40.01% in 2014, and it increased to 41.00% in 2015. In 2016, it made another ascend to 44.24%, until it reached 47.47% in 2017 [2]. [14]. This shows that there are factors that contributed to the failure in suppressing the number of non-paying tax vehicle owners and the different perspectives of the community and the Bapenda of West Java Province on the design of available services, even though digital-based services for paying vehicle taxes had been introduced to the public.

From the preliminary research conducted by the authors, it was found that the behavioral specifications and habits of the community regarding motorized vehicles as service users have not been socio-culturally studied in depth. For this reason, if their socio-cultural characteristics can be mapped, Bapenda can rearrange the focus of its tax service system in an inclusive manner, seeing problems from the community's point of view and providing solutions according to their needs and expectations. This study of ethnography-based user experience (UX) on Motor Vehicle Tax Payment Service System in West Java Province is intended to help the West Java Provincial Government to map, investigate, and analyze problems that arise in tax services, especially Motor Vehicle Tax. Furthermore, it is also expected to provide input or an overview of the tax service sectors that can be improved and optimized in the future. This ethnography-based UX approach emphasizes on the distinctive cultural aspects of the society and the rapid development of technology in finding innovative and targeted solutions, in this case the Motor Vehicle Tax service system in West Java Province.

2. LITERATURE REVIEW

The spread of digital technology today has fulfilled almost all domains of people's lives. Various organizations including the government are trying to take advantage of the opportunities provided by digital technology to improve public services that are increasingly automated, easier and closer to the people [1,2] Digital transformation in all fields is fundamentally changing the way organizations operate and provide value to their users. The approach to the digital transformation process for public services is to close various gaps or even eliminate the gaps in the business processes generated by the analogue/manual system. Turning it into a service system that is more needed and expected by the community digitally.

Service design is a design discipline that focuses on solving the right problem – by framing the problem or opportunity in the right way, starting with investigating customer/user needs [12]. Service design applies process and design skills to the development of creative and practical services to improve the quality of existing services. Then, it helps organizations see their services from the customer/user perspective. As a process, service design is driven by a design mindset to seek elegant and innovative solutions through iterative cycles of research and development. As a tool, service design is adopted from branding, marketing, and mapping of customers'/users' journey and UX in a specific destination. As a management approach, service design is continuously embedded in the organization. It can be used as a management approach to create innovations for services in a completely new, physical or digital product.

Service design principles include: 1) user/client centered, 2) co-creative and collaborative, 3) iterative, 4) sequence, 5) tangible proof, and 6) holistic [12]. This means that the experiences of the people affected by the service must be taken into account by service design. Therefore, all relevant stakeholders should be involved in its development process. Because service design is a sequence of interrelated actions based on the needs of each stakeholder in a real situation, and intangible values are proven as a physical and mental reality. Furthermore, the intangible service design must also be visualized in the form of physical artifacts. Ultimately, the entire service environment must be considered to meet the needs of all stakeholders through an entire ecosystem of sustainable service design.

Design ethnography is a qualitative research design for the development and implementation of ideas to concepts in the service design process from the user perspective based on the users' daily life [12]. The goal is to ensure that the designs created can be understood and well received by the audience. Design ethnography, like other design-specific skills, is a user-centered creative process that facilitates an empathetic aspect between users, clients and designers, as well as the stakeholders of the service design process [12]. Ethnographic researchers in their observation process study customers/users in their natural environment to be used as input in the service design process. The aim is to understand the point of view of the people of an area on what they experience and how they react to it [13].

Regarding this phenomenon, one of the factors that will determine the success of a digital service is how to create a good service interaction quality with users so that they get a positive experience and is able to meet the needs of these users optimally. For this reason, in order to better understand users in using digital services, an organization needs to understand the factors that can influence users' behavior as listed in the table 1.

From the table 1, the complexity in the classification of various factors affecting customer behavior can be seen. However, at a macro level, these classifications can be combined into several major groups, such as: technical factors, social

factors, individual factors, and situational factors, as follows:

Technical factors; related to service performance including its safety, reliability, ease and convenience [3], while the economic factor concerns with the operational costs that must be incurred by the customer and the residual value (e.g. the value of vehicle depreciation, in the context of motor vehicle tax / PKB). However, macro factors need to consider the overall economic situation of the region, household income levels, and other macroeconomic parameters.

Social factors; the most important thing is the influence of culture, subculture, social class, family, and interpersonal or reference. Culture refers to the values, ideas, attitudes, and symbols that people adopt to communicate, interpret, and interact as members of society [4]. The peculiarities of cultural traditions play a role in the decision-making and action processes in each community group. The concept of culture influences customers' behavioral patterns, and can be used to differentiate subcultures of substantial market segments. Social influence can be transmitted through abstract elements (values, attitudes, ideas, religion), and material elements (symbols, buildings, products, brands). The process by which customers absorb culture is called socialization. Good customer socialization can be sustained in an individual's life thus results in special preferences for products and services, shopping patterns, and interactions with other people [5].

Table 1. Factors that influence customers' behavior

Thinker	Factors	Examples
Kotler [16]	Cultural	Culture, subculture, and social class.
	Social	Reference group, family, role and status.
	Individual	Age and life cycle, occupation, economic situation, lifestyle, personality and self-concept.
	Psychological	Motivation, perception, learning, beliefs and attitudes.
Brassington [15]	Individual	Personality, perception, motivation, attitude
Jobber [18]	Situational	Sociocultural, technological, economic/competitive, political/regulatory.
	Group Influence	Social class, Culture/subculture, Referral group, Family.
	Marketing Mix	Price, product, place, promotion.
Levy [17]	Demographic	Age, education, income, race, material status, household size, gender.
	Marketing Mix	Product, place, price, promotion.

	Internal/Psychological	Motivation, perception, learning, personality, attitude.
	External-Social	Culture, social class, reference group, family.
	Situational	Physical environment, social environment, temporal perspective, occupation, previous situation.

Individual factors; this concerns with how products or services relate to individuals psychologically. Self-image is an individual's personal view of himself. A young customer group tends to consume products and/or services that represent the group's conception. And vice versa with the old customer group. Individual differences can affect customer behavior, including personality, lifestyle and psychographics, and motivation. Personality reflects an individual's consistent response to his environment, social influences and behavior. Common personality traits related to customer behavior include levels of openness, self-esteem, and values [5].

Situational factors that are directly related to purchasing power also affect customer behavior. The things that need to be anticipated, for example: special events, unexpected events, time pressure, unexpected costs, and changed plans [3]. Situational factors related to the environment are important to consider. For example: Service unit building (including physical layout, atmosphere, and location), support from marketers, and inviting impression of the building [5]. This model does not include economic factors, because it is built for a market with customers with a steady stable income. This model will be difficult to apply directly to areas that have customers with low and uncertain income.

From the literature review above regarding the determining factors in user interaction, it is necessary to understand the users more specifically in order to identify the factors that have caused the failure of digital vehicle tax services.

3. METHODS

The mixed methods research used is a combination of qualitative and quantitative methods with an emphasis on the aspect of technology utilization in the Motor Vehicle Tax service, and the relationship of cultural aspects that develop in the community to the Motor Vehicle Tax service. At the beginning of the research, an approach was carried out to better understand the key issues of this research. Secondary data were taken through literature studies from various books, and the latest international journals related to service design, as the

rationale for an ideal public service design, including previous studies, policy documents, and service digitalization programs produced by Bapenda of West Java. Then the formulation of the problem, research objectives, limitations, as well as a literature study on public service design, ethnography and user experience were carried out.

The field research was conducted using purposive sampling as a means to select research locations and participants who are the key decision points in this research. The goal is to get maximum information about data relevant to the research question. Primary data were obtained through: 1) interviews with Heads of Bapenda branch offices regarding case studies of tax service design through SAMSAT offices in 24 regions and the design of digital tax services they carried out through digital applications, 2) field surveys on the implementation of tax service designs which include: 1) Purwakarta Regency, 2) Garut Regency, 3) Soreang Regency, 4) Cirebon Regency, 5) Bandung City, and 6) Karawang Regency.

Triangulation was conducted by using more than one source of information to obtain data related to the same case, then confirming data from different sources and different data collection methods [6]. The analysis was conducted based on the comparison between: 1) conceptual information from various literatures related to: public service design; ethnography, and UX; 2) service design information for the research and development division of Bapenda of West Java Province in 2017-2020 related to information on various service programs that have been carried out; and 3) interviews with resource persons. While the sources in this study are: 1) Vehicle Tax Service office - Purwakarta branch, 2) Vehicle Tax Service office - Garut branch, 3) Vehicle Tax Service office - Soreang branch, 4) Vehicle Tax Service office - Cirebon City branch, 5) Vehicle Tax Service office - Bandung branch, and 6) Vehicle Tax Service office - Karawang branch; and 4) observation of the experience gained by the people in the areas studied. Triangulation is used to increase the validity of the qualitative research conducted.

Direct non-participant observation to the object of research was carried out to map and identify problems that arise. Meanwhile, participant

observation was carried out by conducting field activities together with Bapenda of West Java team by conducting interviews (unstructured and structured interviews, individual and focus group interviews) with community leaders who drive taxes in the 24 regions mentioned above.

An in-depth study of the theory or model on the symptoms found in field observations was conducted to obtain optimal parameters for the research to be further developed. After having general principles that accurately describe and explain things that happen to the object of research, predictions were then made related to the object of research. The results of these predictions will be reviewed by collecting deeper observations to try to determine whether the facts are in accordance with what was predicted or need some sharpening of the research predictions that have been prepared.

All the results of the related technology-science-art-social-cultural reflection parameters were summarized, so that comprehensive knowledge related to the research made can be built. In the end, it is hoped that this will become a recommendation (from the aspect of technology-science-social-culture) to Bapenda and its stakeholders. This is the key to getting conclusions that are able to answer the research questions. This stage contains clear, sharp, detailed and in-depth concepts as the basis for the next service development strategy for Bapenda as the research output.

4. FINDINGS

The complexity of motor vehicle tax services at the off-line SAMSAT of Bapenda of West Java Province lies in, among others: 1) SAMSAT locations that are not fully covered by taxpayers; 2) partners involved in motor vehicle tax services have their own rules and procedures; 3) motor vehicle tax management files require physical evidence; and 4) procedures that are not/less understood by taxpayers. During the implementation of digital services, problems that are unique to each region were found, such as the unpreparedness of cash owned by taxpayers, forgetting factor, poor internet network, the ever-existing rejection of taxes. and the variety of people's digital literacy.

The design of digital public services needs to explore what the digital technology integration process that occurs on a micro level in society is like. Furthermore, it is necessary to see what practices occur in the community in each region contextually, departing from the current situation in the field to

gain a better understanding. This is important to determine a strategy for integrating digital technology into public services that comply with the characteristics of the community in each region. For big cities with a high level of digital literacy and adequate infrastructure, digital services can be well adopted, while in other places conventional services remain the people's main choice.

Differences in community culture in the region were also found to determine the effectiveness of various services. In areas that have strong traditional values and culture, they prefer physical services because they believe that a service is considered certain and in line with expectations when there is a direct interaction with officers (humans); digital logic is considered abstract. Meanwhile, in areas with more modern culture, they tend to avoid physical gatherings because they are considered as time-consuming and energy-consuming. The same goes for the payment system. In some areas, people still prefer to pay in cash, while in other places online payments are more desirable.

From the results of the collected field data, the design of available public services needs to explore what the process of integrating digital technology that occurs on a micro level in society is like. Furthermore, it is necessary to see what kind of practices that occur in the community in each region are contextually departing from the current situation in the field to gain a better understanding. It is important to determine a strategy for integrating digital technology into public services based on the characteristics of the people in each region.

5. DISCUSSION

The concept of public service design made by Bapenda of West Java tends to follow an exclusive approach which believes that service problems can be solved easily through an automated system approach based on smart technology [7,8]. This has resulted in over-focusing service design efforts based on the value assumptions made by the organization rather than paying attention to the actual user experience [9,10,11].

The lack of success of the available PKB digital service system proves that the design of the tax service system still needs to pay attention to a traditional user-centered approach. For this reason, Bapenda of West Java needs to map the roles of actors, interactions, and interdependencies that underlie the formation of specific values. The mapping is important to describe what the formal and

informal connections that take place in the society look like [12].

6. RECOMMENDATIONS TO IMPROVE THE DESIGN SERVICE

Related to the factors stated above, based on the findings in the field and data triangulation, this study analyzes the aspects described in the aims and objectives of this study, then provides several recommendations which are expected to be used as a basis for policy and decision makers regarding the things need to be done in the future. This also forms the basis for development, optimization, improvement, and even innovations related to motor vehicle tax services in West Java Province. Focusing on the use of technology, the influence of culture and its relationship to the motor vehicle tax service system, some recommendations can be conveyed, as follows:

6.1 The Influence of Culture on Motor Vehicle Tax Service Methods

The community in each region in West Java Province has its own unique character. This is influenced by many factors such as ethnicity (majority of Sundanese), developing culture, social order, economy, and geographical location.

If the problem of geographical location can be easily solved by providing physical facilities (such as mobile SAMSAT/Samling facility, carrying SAMSAT/Samdong, and others), cultural, social, and economic problems certainly require a separate approach that cannot only be solved through the fulfilment of physical facilities because they are non-physical. Special approaches are needed so that the taxpayers can know, understand, and accept their tax obligations, and then they can consciously fulfill their obligations.

Therefore, West Java Provincial Government through Bapenda needs to integrate this cultural approach from what is currently only an initiative into a government program. Hence each service function provided can encourage and provide flexibility for each Regional Revenue Management Center (UPT-PPPD) to review uniqueness in the region and create innovations in motor vehicle tax services that are unique and necessary in their respective regions.

6.2 Planned Work Program

In relation to this policy, the technical implementation unit of the Regional Revenue Management Center (UPT-PPPD) must of course formulate programs related to the peculiarities of their respective regions. UPT-PPPD can develop long-term planned programs in collaboration with the academics, cultural figures, community leaders, and local West Java Provincial Bapenda partners to think about and develop programs that are unique, planned and measurable, to operational ones that, in fact, adhere to the existing laws and regulations. The focus is on a psychological approach that is humanist, user-friendly, and broader than just the visual display of regional symbols.

6.3 Service System and Product Update

The development of ICT has now been absorbed by the community at large. The community has generally taken advantage of this ICT even to areas that are not reached by physical facilities. The use of this technology is not only in the information and communication sector, but even in the financial sector with the growth of fintech businesses. The use of ICT has been proven to provide convenience and flexibility for the community, especially in overcoming problems of time, distance, and at affordable costs, and even financial payment schemes by providing instalment options according to the people's ability.

Several SOEs/BUMDs have utilized ICT to help bridge companies with their consumers by offering information conveniences through call centers and websites, as well as ease of payment for products and services in collaboration with fintech, through the help of online applications, both on mobile and web sites. This opportunity is of course also open for Bapenda, to integrate motor vehicle tax services with the latest ICTs that continue to develop. The Sambara application, which is currently running, needs to be increased in its capacity and capability and is managed professionally, in order to broadly provide the best service functions for the taxpayer community.

Cooperation with banking partners and fintech businesses needs to be developed and expanded in the concept of partnership, not only in the expansion of the payment network but also in the possibilities for easy and affordable motor vehicle tax financial schemes for the taxpayers, of course based on the applicable laws and regulations.

6.4 Civil Servant (ASN) Capacity Building

The program implementation related to public services certainly requires the readiness of the assigned Civil Servant (ASN) capacity. In this regard, ASN needs to be supported by a foundation of knowledge, insight, and attitudes, not only on the use of technology, but also on the psychological and cultural approaches referred to in this study. The Bapenda of West Java Province can work independently or cooperated with other parties to provide briefing and training to its ASN so that they can professionally serve the taxpayer community to the maximum of their capacity.

6.5 Legal Policy and Protection

In order for programs related to public services to be planned, measured, operational, have adequate resource support, and are well supervised, indeed, they require the support of policy infrastructure and a strong legal protection. Policies and legal protection are also needed to provide flexibility for ASN, in this case the Bapenda of West Java Province and its staff to innovate. The policy and legal protection in question can be in the form of an expansion of the main functions of the Bapenda of West Java Province regarding partnerships, as well as the Regulation of the Governor of West Java Province regarding motor vehicle taxes in particular and Regional Taxes in general, while still referring to higher regulations, namely related Ministerial Regulations, Presidential Regulations, Legislation and the laws that it operates under.

7. CONCLUSION

To get to digital-based services, Bapenda of West Java Province also needs to monitor and evaluate the progress of the adoption of various service innovations that it has made for the community. One of them is to simplify the existing digital services to minimize the dual function services and eliminate the ones that bring a negative impact / make it difficult for users so that public services can be digital-based. In addition, the right communication strategy to the public also needs to be made for each age segment of taxpayers with a more inclusive and contextual approach to public service design models, in accordance with the cultural characteristics and traditions that exist in each region.

ACKNOWLEDGEMENTS

This multi-year research is supported and financed by the Bapenda of West Java in collaboration with academics with the aim of improving the design of a digital-based public service system in tax payments.

References

- [1] Lembaga Administrasi Negara Republik Indonesia, Strategi Peningkatan Mutu Pelayanan Publik, Jakarta: LAN, 2006.
- [2] Instruksi Presiden No. 3 Tahun tentang Kebijakan dan Strategi Nasional Pengembangan *E-Government*, 2003.
- [3] David Jobber, Principles and Practice of Marketing, New York: McGraw-Hill, 1995.
- [4] Peter J. Paul & Jerry C. Olson, Consumer Behavior: Perilaku konsumen dan strategi pemasaran jilid 1. Alih Bahasa, Damos Sihombing. Jakarta: Erlangga, 2005.
- [5] F. R. Kardes, Consumer Behavior and Managerial Decision Making, 2th ed. Upper Saddle River, New Jersey: Prentice Hall, Inc., 2002.
- [6] K. Krathwohl, Methods of Educational and Social Science Research (2nd edition). New York: Addison-Wesley Publishers, 1998.
- [7] R. Kattel, V. Lember, and Piret T., Collaborative Innovation and Human-machine Networks, 2020, Public Management Review 22 (11): 1652–1673.
- [8] K. Timeus, J. Vinaixa, and F. Pardo-Bosch, Creating Business Models for Smart Cities: A Practical Framework, 2020, Public Management Review 22 (5): 726–745.
- [9] SP. Osborne, Z. Radnor, T. Kinder, I.S. Martinez, The SERVICE Framework: A Public-service-dominant Approach to Sustainable Public Services. British Journal of Management Vol. 00, 1-15, 2015.
- [10] E. Eriksson, and A. Hellström, Multi-actor Resource Integration: A Service Approach in Public Management, British Journal of Management Online First 1–17, 2020.
- [11] S. Holmlid, Participative, Co-operative, Emancipatory: From Participatory Design to Service Design, in Proceedings of the 1st

- Nordic Conference on Service Design and Service Innovation. 24–26 November 2009. Oslo, Norway, 2009.
- [12] Stickdorn, M., M. E. Hormess, A. Lawrence, and J. Schneider, *This Is Service Design Doing: Applying Service Design Thinking in the Real World*. Sebastopol: O'Reilly, 2018.
- [13] J.P. Spradley, *The ethnographic interview*. New York: Holt, Rinehart and Winston, 1979.
- [14] Y. M. Pasaribu, D. C. Sarumpaet, Y. Setiawan, A. Dariadi, *Kajian Psiko-Etnografi Wajib Pajak Terhadap Strategi Pemungutan Pajak Kendaraan Bermotor di Provinsi Jawa Barat*. Bandung: Badan Pendapatan Daerah Provinsi Jawa Barat, 2018.
- [15] Frances B, Pettit S, (). *Essentials of Marketing*, Prentice Hall, Pearson Education, 2007.
- [16] Kottler Phillip, *Marketing Management*, 11th International Edition, Prentice-Hall, 2004.
- [17] Michael Levy, *Retailing Management*, Mcgraw-Hill, Irwin, 1998.
- [18] David Jobber, *Principles and Practice of Marketing*, Mcgraw-Hill, 1995.