SQB -- A Research on Its Applications and The Correlating Mechanism

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Abstract. After several former studies on the cognitive heuristics and correlating economical influences, the explanatory effectiveness of SQB perspective is explained by multiple empirical scenarios. Hence, this essay will focus on three applications in which the SQB perspective, correlating models and research methods would provide insightful opinions. After reviewing the former attempts on the original model and early researchers' empirical examination on the Status Quo Bias (SQB), this essay will concentrate on SQB and technology resistance among the public sector employees, SQB and medical insurance outcomes, SQB and shoppers' online shopping resistance respectively. For each application, research methodology will be explained and be integrated into the SQB perspective through the research question. Through researching on these applications' methodology and main studies, discussing cognitive biases existing in the empirical scenarios, the present study could approach to the efficiency of the explanation from SQB perspective.

Keywords: literature review, Status Quo Bias, technology resistance, quantitative study, behavioral economics.

1. Introduction

Status Quo Bias (SQB) is an irrational preference for the prevailing way of doing things or thoughts [1]. It provides an endogenous method of picking a choice as fast as possible in a complex decision-making progress. SQB can help the decision maker with reducing the time and energy which a choice would take. However, in some conditions, it has been found that SQB could not help with improving the efficiency. For instance, a plate of salad is a healthier, cheaper and tastier choice, but due to the SQB, an individual is of no possibility to go to try that plate of salad. This essay will choose three scenarios and attempt to discover the SQB in these different circumstances and the mechanism about how SQB effect on individual behaviors.

2. Literature review

SQB was first proposed by Samuelson and Zeckhauser in 1988 and they demonstrated its existence through a relatable example. They discussed a colleague who, for many years, always chose the same sandwich for lunch, never deviating from this choice [1]. In their study, they conducted an experiment with participants to illustrate the general applicability of SQB. The experiment included two conditions. In the first condition, individuals were informed that they had inherited money and were given four investment choices. In the second condition, participants were also informed about the inherited money, but were further told that some relatives had already chosen one of the investments first. Interestingly, participants in condition 2 tended to choose the preselected choice. To explain this bias, researchers categorized three different explanation approaches: cognitive misperception, rational decision making, and psychological commitment. These categories provide insights into the underlying mechanisms of SQB and help to understand why individuals are likely to maintain the status quo even when presented with alternative choices.

3. Original components of the SQB perspective

3.1. Cognitive misperception

SQB is a strategy that helps individuals minimize uncertainty and the costs associated with making a transition. Uncertainty costs arise from not knowing the value of a product or service in advance. Consequently, people tend to preserve brands or vendors they have had positive experiences with rather than venturing into the unknown. This is because transitioning to a new brand or vendor would require investing time and effort in conducting research and due diligence. However, these consumptions have already been incurred when opting for the current choice. Therefore, it is often considered a sensible decision to maintain the status quo. In this context, it can be argued that individuals make similar choices when faced with comparable options, regardless of the potential benefits that might outweigh the costs of uncertainty and transition. Thus, conventional decision-making cannot fully account for the tendency of people to maintain the status quo.

3.2. Rational decision making

The aspect of SQB is often referred to as the sunk cost effect, which occurs when individuals are more inclined to continue with a particular course of action after having invested money, effort, or time into it [2]. This behavior is often justified by individuals so as to avoid appearing wasteful [3]. Sunk costs can also pertain to skills that individuals may lose when there is a shift in the way of working. For instance, the time spent on training for the current method may become irrelevant when a new technology is introduced. The researchers additionally discovered that the influence of friends and colleagues, as well as the level of control individuals have, also have an impact on SQB [4]. The latter factor, in turn, can be attributed to the user's confidence in understanding and adapting to change.

3.3. Psychological commitment

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4. SQB and Resistance against technology among public sector employees

4.1. Background on technology resistance among the public sector employees

The use of technology in government has significantly increased the level of digital advancements at the local level depends on how employees in the government accept or resist technology. Many existing theories do not address the reliable factors that determine technology usage or users' cognition. This study fills that gap by taking into account the perspective of SQB. Researchers developed a comprehensive theoretical model to understand how employees resist technology.

4.2. Theoretical model and the correcting process based on quantitative studies

Before the main study, researchers firstly conducted theoretical analysis according to the three original categories of SQB and an Organizational and social influence category that consists of influencing factors which do not belong to the SQB perspective [1]. As shown in Figure 1, an integrated theoretical model is proposed as follows:

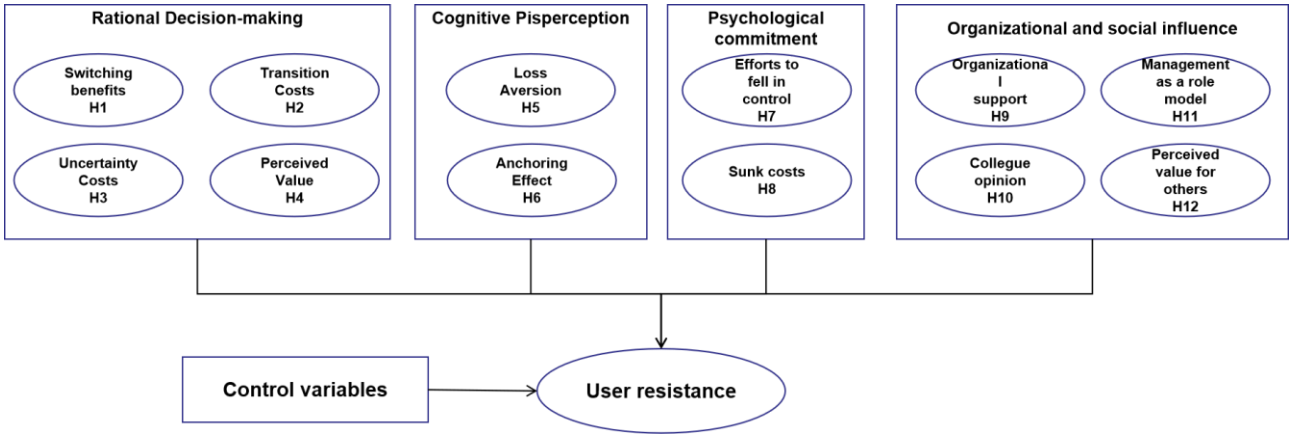


Fig. 1 Theoretical model of the technology resistance among the public sector employees [5]

After the initial investigation, the researchers conducted a trial study with a group of 161 individuals. These participants, who were public sector employees, used a modified version of a questionnaire. The questionnaire utilized Likert scales consisting of seven points, with participants indicating their agreement with the statements. The researchers then performed a comprehensive analysis of the collected data trying to detect the significant correlations and casual effect. In order to refine the theoretical model, the researchers conducted a multiple linear regression analysis. Through this analysis, they examined the regression coefficients (beta) and the corresponding t-values for each coefficient. The researchers presented the results in a table, which displayed the level of correlation between user resistance and each influencing factor. The outcomes revealed that some hypotheses were supported while others were not.

4.3. Discussion on the corrected model and cognitive biases' explanation efficiency

Aftermath, researchers corrected the theoretical model and acquired an evidence-based model which is examined by the empirical study (see Figure 2).

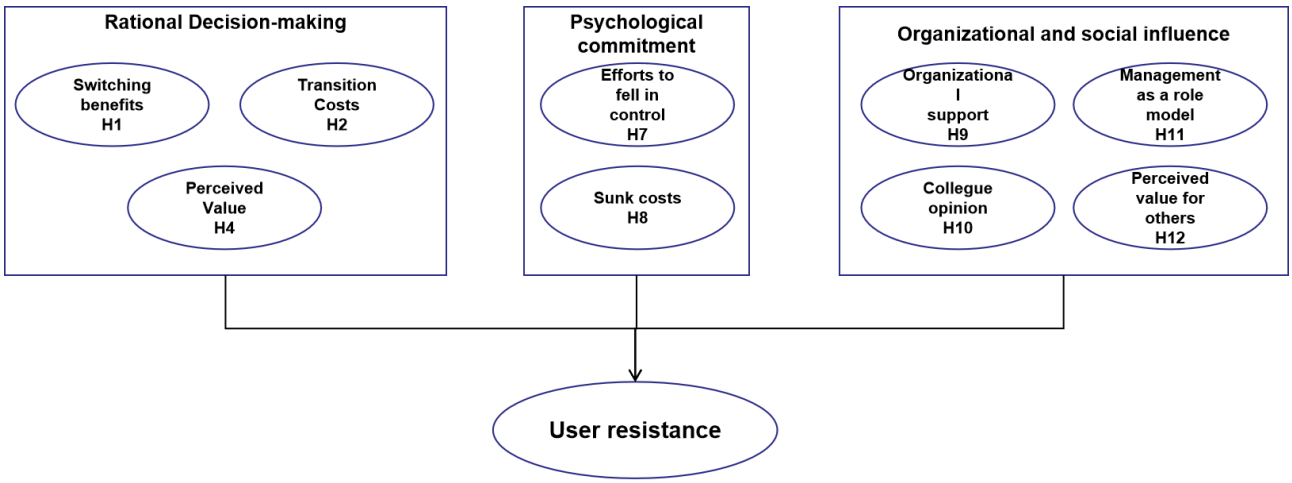


Fig. 2 Evidence-based model of the technology resistance among the public sector employees [5]

By conducting a mixed-method study in German municipalities, the researchers identified the factors that impact participants' resistance to technology and proposed effective interventions. The study revealed that the main reason for public-sector employees' resistance to technology is their perception of its value, sunk costs, potential gains from switching, and value for citizens.

5. SQB and Insurance outcomes

5.1. Review and former research on the relationship between the SQB and insurance outcomes

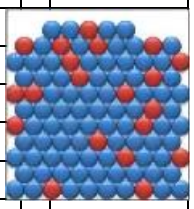
The research of related topics suggests that decisions with a default or Status Quo option significantly impact the choices people make. Every decision has a default position, which is the outcome that occurs in the absence of an active choice [6]. In the public domain, policymakers are offered the opportunity to promote sounder market outcomes by establishing suitable defaults. This involves defining which alternative will be implemented if an individual fails to make a choice. Therefore, it is worth investigating whether SQB affects decision-making regarding health insurance policies in laboratory experiments, and if the effect can be mitigated through experience.

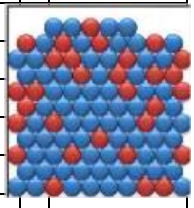
5.2. Data collection and analysis on the insurance outcomes

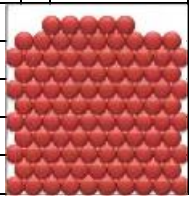
Researchers initially conducted an online experiment to examine the relationship between health insurance policy and the SQB [7,8]. This experiment involved determining the risk preferences of subjects using a multiple price choice task, which is a commonly used method for measuring risk preference [9]. The task consisted of presenting subjects with ten different situations where they had to choose between two lotteries: one being riskier and the other being safer. The decisions were presented on a single screen, and the probabilities of winning were represented using colored balls in urns. Table 1 provides a visual representation of all the decisions made by the subjects during the experiment.

Table 1. Risk Appetite Online Test Example [10]

Situation							
Situation 1							
	Lottery A		Lottery B				
Probability	10%	90%	10%	90%			
Payoff	5000 ECU	0 ECU	3000 ECU	1000 ECU			
Your choice							
Situation 2							
	Lottery A		Lottery B				
Probability	10%	90%	10%	90%			
Payoff	5000 ECU	0 ECU	3000 ECU	1000 ECU			
Your choice							
Situation 3							
	Lottery A		Lottery B				
Probability	20%	80%	20%	80%			
Payoff	5000 ECU	0 ECU	3000 ECU	1000 ECU			
Your choice							
Situation 10							
	Lottery A		Lottery B				
Probability	100%	0%	100%	0%			
Payoff	5000 ECU	0 ECU	3000 ECU	1000 ECU			
Your choice							







In the second and main part of the research, researchers conducted a study in a controlled laboratory environment to examine the impact of a default option known as Status Quo. They

compared the health insurance choices made by two groups receiving different treatments with the choices made by a control group. In experiment group, the default option was a full coverage insurance policy, while in the other groups, the default choice was a policy with a maximum co-insurance requirement. There are no specific default options for the control group The laboratory experiment involved individual decision-making tasks over four periods. In each period, participants were presented with five different choices (A to E) with varying co-insurance arrangements that required them to pay different percentages (ranging from 0% to 50%) of their medical expenses. The decision parameters of all individuals are same. The likelihood of being sick and the costs of medication care varied across the different periods. (see the table 2)

Table 2. Data collected from the main study on the insurance decision [12]

Period	Probability of illness	Cost (ECU)	Premium (ECU)				
			Risk premium (ECU)				
			Expected value (ECU)				
			Policy A	Policy B	Policy C	Policy D	Policy E
			0% co-insurance	20%	30%	40%	50%
Period 1	0.4	400	192	144	128	104	88
			32	16	16	8	8
			1808	1824	1824	1832	1832
Period 2	0.2	800	200	160	136	112	88
			40	32	23	16	8
			1800	1808	1816	1824	1832
Period 3	0.1	1500	187.5	150	127.5	105	82.5
			37.5	30	22.5	15	7.5
			1812.5	1820	1827.5	1835	1842.5
Period 4	0.03	3000	112.5	90	76.5	63	49.5
			22.5	18	13.5	9	4.5
			1887.5	1892	1896.5	1901	1905.5

5.3. Discussion on the insurance outcomes research

SQB exists in health insurance choices, meaning individuals have a tendency to prefer the default option or stick with their current choice rather than switching. However, the bias diminishes as individuals gain more experience and make repeated decisions. The researchers suggested that unbinding covenants in Medicare can help facilitate more rational choices and help contain health care expenditure. Additionally, it was mentioned that capitalizing on SQB or supporting consumers in becoming more experienced in choosing health insurance policies could be alternative means of overcoming the drawbacks of SQB.

6. SQB and shoppers' mobile website purchasing resistance

6.1. Rethink on the SQB perspective and the retailer market economical phenomenons

The topic of resistance to purchasing products on a retailer's mobile website has been discussed by behavioral economic researchers. The use of mobile websites for purchasing is often a source of resistance for many online shoppers, and the reasons behind this resistance are not well understood. The researchers aim to bridge the knowledge gap by investigating the impact of SQB on this resistance. Two hypotheses are proposed that address the relative impact of desktop purchasing inertia on attractiveness perceptions and cognitive effort perceptions in mobile online shopping. The study focuses on clients who only use the desktop website for purchasing and is aimed at exploring the role of cognitive dissonance and switching costs to understand their resistance behaviour.

6.2. Former study-based questionnaire design and data analysis

One purpose of the research was to investigate the hesitancy of online shoppers in utilizing a retailer's mobile website for purchasing products. Researchers employed a cross-sectional research design to gather data from customers who exclusively used the desktop website for their purchases. The study sample included customers aged 18 and above who had never before made purchases through the mobile website.

The researchers created a survey to collect information from customers regarding their reluctance to purchase mobile websites. The survey contained questions about factors such as resistance to purchasing mobile websites, the attractiveness of alternative options, the cognitive effort involved in purchasing, the perceived advantages of mobile websites, and customers' desktop purchasing habits. A total of 484 clients participated in the online survey and met the selection criteria.

In order to analyze the data, the researchers employed statistical methods such as confirmatory factor analysis to determine the validity of their measurement model [10]. Based on the collected data, a structural model was created, and hypotheses were tested through hypothesis testing. The analysis plan considered the impact of desktop shopping SQB behavior on resisting purchases from cellphone websites [11].

The findings of the study revealed several insights into the factors contributing to resistance in using a retailer's mobile website. The study identified the influence of perceptions, inertia, and cognitive dissonance in shaping customers' resistance behavior. The researchers concluded that perceptions of the relative advantage of mobile website purchasing, and desktop purchasing inertia had the strongest positive influence on resistance to using the mobile website. This research contributes to filling a gap in the existing literature and provides insights for retailers to develop strategies to reduce resistance to mobile website purchasing.

6.3. Discussion

The research discovered that the aversion to buying products through a retailer's mobile website is affected by the status quo and cognitive misperception. Customers who exclusively used the desktop website were critical of the appeal of purchasing through the mobile website and believed it required more mental effort. The study highlighted that the belittlement of mobile website purchasing is caused by perceptions of its comparative benefits. The reluctance to utilize the mobile website was greatly influenced by the inertia of purchasing through the desktop site, meaning customers were accustomed to using the desktop site and resistant to change. Retailers can utilize this study to create strategies that can decrease opposition to purchasing through the mobile website.

7. Conclusion

Some of the studies mentioned earlier may be included in any change effort, but having a clearer understanding of their specific cause-and-effect relationships could enhance the success of decision-making processes. The significance of SQB lies in its capacity to provide an extra standpoint. Through

this perspective, researchers are able to explore different aspects and connect seemingly unrelated observations, thus contributing to a more comprehensive understanding of phenomena related to change.

References

[1] Samuelson W, Zeckhauser R SQB in decision making. J Risk Uncertain .1988, 1(1):7–59

[2] Kim HW, Kankanhalli A Investigating user resistance to information systems implementation: a SQB perspective. MIS Q.2009, 33(3):567–582

[3] Arkes HR, Blumer C The psychology of sunk cost. Organ Behav Hum Decis Process.1985, 35(1):124–140

[4] Kahneman D, Tversky A Prospect theory: an analysis of decision under risk. Econometrica.1979, 47(2):263

[5] Oschinsky, F. M., Stelter, A., & Niehaves, B... (2021). Cognitive biases in the digital age – how resolving the status quo bias enables public-sector employees to overcome restraint. Government Information Quarterly (8), 101611.

[6] Tversky, A.; Kahneman, D. Rational choice and the framing of decisions. J. Bus. 1986, 59, 251–278.

[7] Holt, C.A.; Laury, S.K. Risk aversion and incentive effects. Am. Econ. Rev. 2002, 92, 1644–1655.

[8] Holt, C.A.; Laury, S.K. Risk aversion and incentive effects, new data without order effects. Am.Econ. Rev. 2005, 95, 902–912

[9] Harrison, G.W.; List, J.A.; Towe, C. Naturally occurring preferences and exogenous laboratory experiments. A case study of risk aversion. Econometrica 2007, 75, 433–458.

[10] Liang, H., Saraf, N., Hu, Q. and Xue, Y., "Assimilation of enterprise systems: the effect ofinstitutional pressures and the mediating role of top management", MIS Quarterly, Vol. 31 No. 1, 2007. 59-87.

[11] Blumberg, B., Cooper, D.R. and Schindler, P.S., Business Research Methods, McGraw-Hill Higher Education, London. 2008

[12] Krieger M, Felder S. Can Decision Biases Improve Insurance Outcomes? An Experiment on Status Quo Bias in Health Insurance Choice. International Journal of Environmental Research and Public Health. 2013; 10(6):2560-2577.