Ex-Post Rationalisation in Business Decision Making: Objective Performance and Subjective Satisfaction

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Business decision making theory and practice mostly focus on either normative prescriptions and/or descriptive analyses of decision making behaviour, decision making situations and contexts, decision making criteria, and decision making heuristics. Much lesser frequently, emphasis is placed on the problem, whether the actual outcomes and results of decision making processes, measured by "objective" indicators are in line with the subjective satisfaction of the decision makers with their efforts, commitment and performance. Various empirical findings, however, suggest that "objective performance" and "subjective satisfaction" with the procedures and the outcomes of decision making are not at all positively related. A field study and a laboratory experiment, hereto, show mixed findings, as reported in this paper.

Editorial note: This paper is a revised version of the paper which was previously presented and published at the WDSI 2017 Annual Conference Proceedings of the Western Decision Sciences Institute, 46th Annual Meeting, April 4-8, 2017, Vancouver, BC, Canada.

INTRODUCTION

Decision making in people´s private life as well as in organisations and businesses has played a preeminent role likewise for scholars and practitioners.

Decisions, from a "rational" perspective, can be characterised as deliberate choices among given alternatives under problem specific goals in order to identify the optimal option, mostly under uncertain circumstances (Eisenführ et al., 2010). The postulate of rational decision making attitudes has been heavily challenged by a series of recent research findings, mostly resulting from behavioural and experimental economics approaches (Altmann & Falk, 2009) (Kahneman, 2012) (Ockenfels, 2009) (Popper, 2002) (Selten, 1998) (Simon, 1997). As a tentative result it seems to be obvious that neither "private" decisions nor business decisions can be subject to "complete" rationality in terms of the "homo oeconomicus" model. In point of fact, empirical evidence has demonstrated that decision making behaviour – and thus decision making outcomes – are subject to influences like emotions, cognitive limitations, lack of information, norms and values, etc. Those "restrictions" lead to "suboptimal" decision making results, which more or less deviate from intended "ideal" outcomes and quite often from desired performance (Neuert et al., 2015).

Interestingly, the subjective perception of individual decision makers´ satisfaction with their results and the objective performance of decision making processes quite often differ tremendously (Neuert, 1987) (Woschank, 2017).

The individual satisfaction refers to the decision maker´s contentedness with and his subjective expectation of the decision making process outcomes, whereas the objective decision making performance is linked to interpersonally measureable indicators like forecast precision, profitability numbers, growth rates, improvement measures, etc.

This paper especially investigates the research question, whether, and if so, how, subjective satisfaction and objective performance in decision making appear in line or diverge from each other, and, given the latter, to which extent and based on what reasons it can be stated and explained.

THEORETICAL FRAMEWORK

Equally, in "profane" publications as well as in the scholarly and scientific literature, there are numerous examples of contradicting subjective performance evaluation and objective outcomes of "competitive" events, games, sports contests, exams, etc. For instance, professional soccer players may assess their individual performance in a game far above average, even though the result of the game has been negative for the own team and a number of sports journalists have evaluated the individual players´ appearance as significantly below average (Zorn, 2008). Likewise, managing directors and CEOs may consider their individual capabilities and managerial performance as excellent, whereas their company´s profitability measures indicate the opposite (Mai & Retting, 2011).

Also, quite often it can be observed that there is a remarkable difference between the competitors´ immediate satisfaction with their performance and their evaluation of that very performance, after a certain time has elapsed (Srinivasan & Ratchford, 1991).

In this context the question strongly arises, why those kinds of discrepancies actually exist and how they can be explained by sound cause-effect-presumptions.

First of all, it might be useful to take a look at major theoretical models of decision making theory in competitive environments. Prescriptive models of decision making theory assume that eventually human behaviour tends to maximise individual profits, benefits and utility, based on the underlying hypothesis of rational conduct (Neuert, 2005). In contrast, descriptive theories of decision making try to answer the question, how decisions are made in reality and why they have been made in the observed and evident manners (Bamberg et al., 2008).

This means that prescriptive rational decision making theory would not allow for any discrepancy between subjective evaluation and objective outcomes of decision making processes. Obviously, only descriptive models of decision making theory maybe pertinent to explain the above mentioned "anomaly" of diverging assessments between subjective satisfaction and objective performance. Moreover, a theoretical model has to be found, which can also explain the "over-time-variation" of this phenomenon.

The existing economic and social science literature provides various theoretical approaches for this problem complex. In particular, Leon Festinger´s theory of cognitive dissonance may deliver robust and sound foundations to outline a plausible theory of subjective and objective performance dissonance and to develop an appropriate empirical research design (Festinger, 1989).

According to Festinger, the disappointment of expectations leads to a state of subjectively felt dissonance and psychological discomfort. This causes perceptions of inconsistencies and dissatisfaction, which ultimately leads to attempts determined to reduce those inconsistencies and to re-establish an individual´s cognitive equilibrium. As a consequence, the "actor" changes his perception of his performance and tries to "harmonise" the objective outcomes with his subjective expectations and desires. Quite often the subjective impressions are adapted to the objective measures in order to regain cognitive consistency (Homburg & Rudolph, 1997).

More generally, the theoretical framework explains that cognitive dissonance evolves whenever at least two cognitive "subjects" we experience (i.e. thoughts, convictions, attitudes, perceptions) hardly or

not at all comply with each other. In this sense, cognitive dissonance can be characterised as an aversive motivational status, which induces the individual to remove this sentiment (Betsch et al., 2011).

This particular theoretical framework can be used, in our view, to explain the above mentioned discrepancies between subjective performance evaluation and satisfaction, and objective outcomes of socio-economic decision making processes.

BASIC HYPOTHESES

The authors conducted and published two research projects dealing with the relationship of decision making behaviour and decision making outcomes. Both studies were based on the notion that specific elements of decision making behaviour positively contribute to improved and/or high decision making performance. The independent variables, reflecting decision making behaviour, were comprised of a set of criteria, which determine various degrees of decision making rationality (i.e. goal orientation, information orientation, process organisation, utilisation of heuristics, outcomes assessment and reflection). It was also considered that imperfect degrees of decision making behaviour are caused by bounded "rationality capabilities" (Neuert, 1987) (Woschank, 2017).

The dependent variables mirror the decision making performance results, likewise including objective measures (i.e. profitability) and subjective satisfaction (in form of individuals´ self-evaluation solely) (Neuert, 1987) (Woschank, 2017).

Whereas one of the research projects utilised a laboratory experimental methodology, the other one applied a mixed method approach, conducting a field ex-post-facto experiment and a validating lab experiment (Neuert, 1987) (Woschank, 2017).

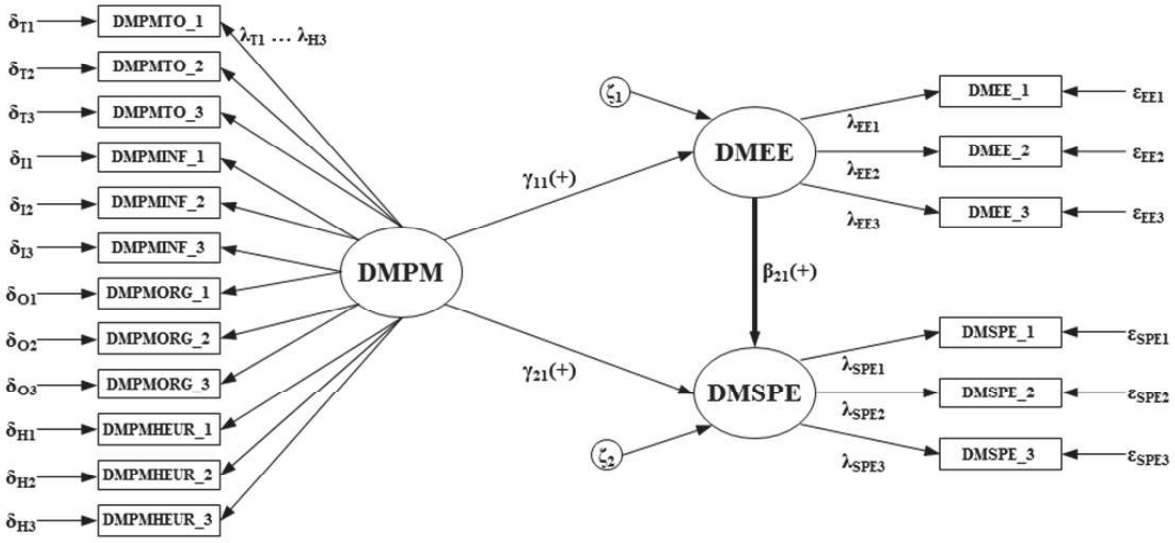
Conspicuously, there were discrepancies being observed between the subjective evaluation and satisfaction and the objective performance comparing the lab experimental results with the field experimental outcomes. The lab experiments did not show any "harmonisation" between subjectivity and objectivity. In contrast, the field experiment showed a significant alignment between subjectivity and objectivity (Neuert, 1987) (Woschank, 2017). Even though the "classical" epistemology of critical rationalism (Popper, 2002) requires a theoretical foundation being developed before their empirical scrutiny, it can be argued, in our case, that our theory of limited rational decision making and its adjacent experimental investigation have provided sound insights, leading to our "derivative theory" of contradicting objective and subjective performance assessment (Häring, 2017).

The theoretical modelling of those empirical observations can be outlined as follows:

- Decision making performance and outcomes are influenced by decision making behaviour elements.
- Decision making performance and outcomes are measured by objective factors and by subjective evaluation and satisfaction with the decision making behaviour and the decision making results.
- Objective performance and subjective satisfaction/evaluation do or do not differ.

The theoretical model can be depicted as follows (Figure 1):

FIGURE 1
THEORETICAL MODEL (Woschank, 2017)



Abbreviations
DMPM: Independent variable decision making process maturity (indicators DMPMTO_1 ... DMPMHEUR_3)
DMEE: Dependent variable decision making economic efficiency (indicators DMEE_1 ... DMEE_2)
DMSPE: Dependent variable decision making socio-psychological efficiency (indicators DMSPE_1 ... DMSPE_3)

Based on the diverging results between the laboratory experiment and the ex-post-facto field study the following basic hypotheses can be formulated:

- H_{B1}: Objective performance and subjective satisfaction are in line in ex-post-facto evaluation situations of the decision maker (time gap between decision conduct and evaluation juncture).
- H_{B2}: The alignment is based on the decision maker´s ex-post-rationalisation of his subjective performance evaluation.
- H_{B3}: Objective performance and subjective satisfaction diverge in real time evaluation situations of the decision maker (no time gap between decision conduct and evaluation juncture; objective outcomes are still unknown).
- H_{B4}: The real time situation context does not allow for any subjective evaluation adaptation.

Our theoretical framework and hypotheses modelling is comprised of the theory of cognitive dissonance and self-justification in combination with explanatory conjectures of real time and non-real time evaluation contexts.

In the following, the empirical research design for hypotheses testing will be described and the research findings will be reported.

RESEARCH DESIGN

The research projects referred to above, investigated the relationship between varying elements of decision making behaviour and decision making outcomes. The decision making results were measured on the one hand by objective economic indicators comprised of cost efficiency, product quality measures, precision of contract fulfilment in the first project resp. degree of goal achievement and profitability measures in the second project. On the other hand in both projects subjective satisfaction assessment and self-evaluation were conducted via questionnaires filled in by the decision makers. In both research projects, laboratory experimental designs were used as research tools. The research samples in both lab

experiments consisted of advanced students and practitioners. The test subjects had to fulfil specific decision making tasks, whose outcomes could be clearly assigned to varying decision making attitudes.

At the end of each decision making task treatment, the test subjects had to fill in the self-evaluation questionnaire without knowing the objective outcomes of their efforts. Within the first project, also a field survey of a sample of practitioners was conducted concerning a specific real world decision making problem, which they had been performing between a minimum of 6 and a maximum of eighteen months ago. Via a questionnaire they had to assess their own performance from a subjective point of view and, in addition, they had to report the actual objective outcomes of the decision making process.

This research approach allowed for a comparison of the two laboratory experimental results on the one hand, and for a comparison between the laboratory experimental results and the ex-post-facto field experimental results on the other hand.

The sample sizes amounted to ca. 300 advanced students and to ca. 100 professionals in the first project, and to 138 professionals in the field experiment and 122 professionals and advanced students in the lab experiment in the second project (Neuert, 1987) (Woschank, 2017).

The laboratory experiment in the first project ultimately provided a sample size of 160 experimental cases results for the objective economic performance measures and for the subjective self-evaluation as well (Neuert, 1987).

In the second project the lab experiment provided 56 objective performance measures and an equal number of subjective self-evaluations. The field experiment provided 138 cases results for both (Woschank, 2017).

The data sets were subject to statistical procedures in terms of frequencies, correlation and regression analyses, and a non-parametric group comparison test. The prerequisites for the statistical procedures were provided via a structural equation modelling process through SmartPLS.

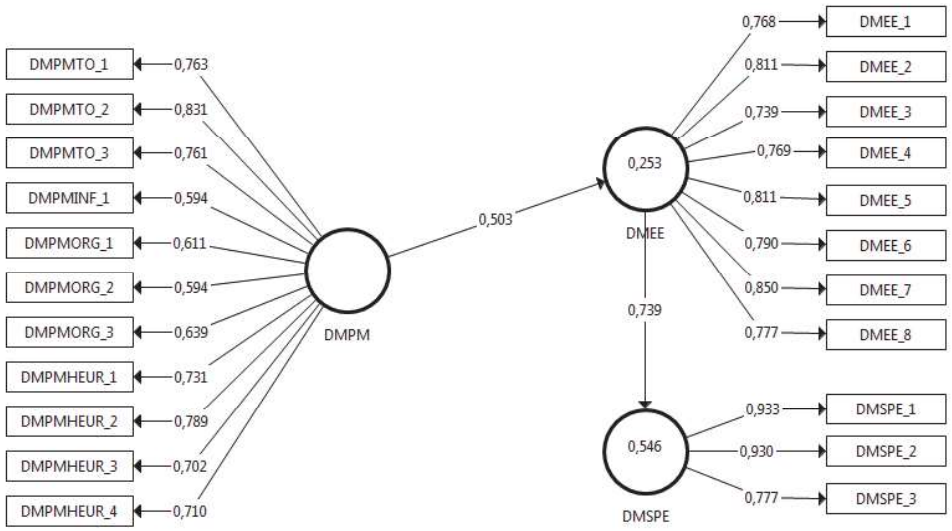
In the following the main research results will be documented.

MAJOR FINDINGS

In order to test our first basic hypothesis HB1 [Objective performance and subjective satisfaction are in line in ex-post-facto evaluation situations of the decision maker (time gap between decision conduct and evaluation juncture)], we conducted path analyses within the structural equation model providing the coefficients of determination (R^2) between decision making behaviour variables and economic decision making outcome variables on the one hand and subjective evaluation outcomes on the other hand.

Finally, the R^2´s between the objective (economic) outcomes and the subjective outcomes were subject to a correlation and regression analysis. At first, the results of the ex-post-facto field experiment are reported. The findings are as follows (Figure 2):

FIGURE 2
RESEARCH RESULTS (FIELD STUDY) (Woschank, 2017)



Investigated effect	Std. path coefficient	R^2	p-value
DMEE → DMSPE	0.739	0.546	0.000

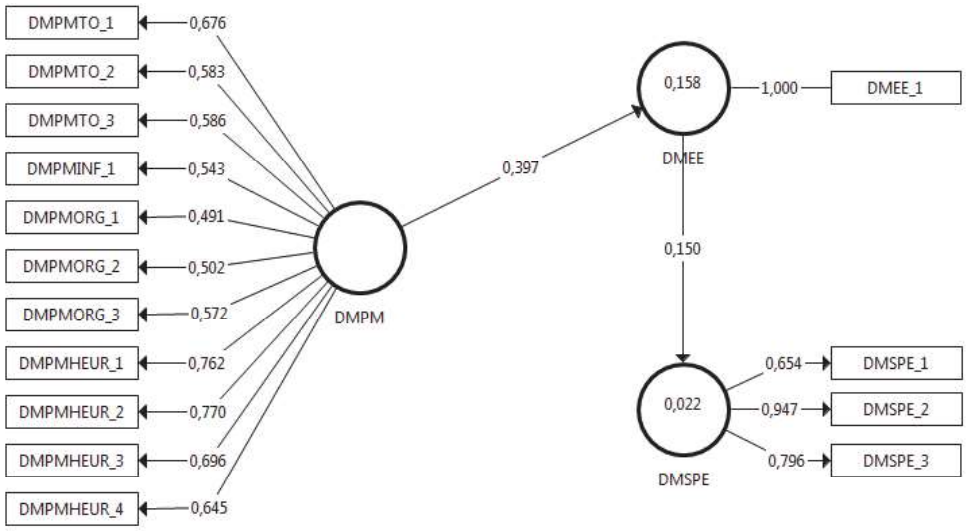
Abbreviations
DMPM: Independent variable decision making process maturity (indicators DMPMTO_1 … DMPMHEUR_4)
DMEE: Dependent variable decision making economic efficiency (indicators DMEE_1 … DMEE_2)
DMSPE: Dependent variable decision making socio-psychological efficiency (indicators DMSPE_1 … DMSPE_3)

The statistical procedures provided an R^2 finding between the objective economic results and the subjective self-evaluation of 0.546, explaining to a high extent the variation of the objectivity and the subjectivity by each other. The R^2 is highly significant (Woschank, 2017).

The statistical findings also tentatively support our basic hypothesis H_{B2} [The alignment is based on the decision maker´s ex-post-rationalisation of his subjective performance evaluation]. The reason for this can be seen in the fact that the underlying decision making task had occurred at least six months ago, which allowed for the ex-post-harmonisation in order to re-establish the equilibrium of the cognitive consistence.

In order to test our basic hypothesis H_{B3} [Objective performance and subjective satisfaction diverge in real time evaluation situations of the decision maker (no time gap between decision conduct and evaluation juncture; objective outcomes are still unknown)] we also conducted a path analysis within the structural equation model, providing the coefficients of determination (R^2) between decision making behaviour variables and economic decision making outcome variables on the one hand and subjective evaluation outcomes on the other hand for the validating laboratory experiment. Finally, the R^2´s between the objective (economic) outcomes and the subjective outcomes were again subject to a correlation and regression analysis. The findings are as follows (Figure 3):

FIGURE 3
RESEARCH RESULTS (LABORATORY EXPERIMENT) (Woschank, 2017)



Investigated effect	Std. path coefficient	R^2	p-value
DMEE → DMSPE	0.150	0.022	0.513

Abbreviations
DMPM: Independent variable decision making process maturity (indicators DMPMTO_1 ... DMPMHEUR_4)
DMEE: Dependent variable decision making economic efficiency (indicators DMEE_1 ... DMEE_2)
DMSPE: Dependent variable decision making socio-psychological efficiency (indicators DMSPE_1 ... DMSPE_3)

The statistical procedures provided an R^2 finding between the objective economic results and the subjective self-evaluation of 0.022, explaining that there is no relationship between the objective economic results and the subjective self-evaluation. This outcome is supported by the fact that the "tiny" R^2 is also statistically insignificant (Woschank, 2017).

These findings also support our basic hypothesis H_{B4} [The real time situation context does not allow for any subjective evaluation adaptation]. Since the lab experiment did not provide the test persons with their actual economic performance, because the questionnaires were filled in immediately, the test persons did not have the opportunity to adapt their subjective evaluation to the objective outcomes. Thus, the situational context did not allow for any ex-post-harmonisation.

These research findings are also supported by the statistical procedures of the laboratory experiment in our first research project. The results refer to the correlation coefficients between the (objective) decision making efficiency and the subjective (motivational) self-evaluation, based on a questionnaire. In addition, a complementary correlation and regression analysis between those variables was conducted. The findings are as follows (Table 1):

TABLE 1
RESEARCH RESULTS (LABORATORY EXPERIMENT) (Neuert, 1987)

Coefficients of Correlation (Lab Experiment)				Coefficients of Correlation (Random Values)			
Variable	PRAE3	PE	MOT3	Variable	PRAE3	PE	MOT3
PRAE3	1.00000	0.20984	0.04255	PRAE3	1.000	-0.091	-0.120
PE	0.20984	1.00000	0.12721	PE	-0.091	1	0.016
MOT3	0.04255	0.12721	1.00000	MOT3	-0.120	0.016	1.000

There is a correlation coefficient computed between the objective economic performance (PE) and the subjective self-evaluation (MOT) of 0.12721, which leads to an R^2 of 0.0162. This result again indicates that there is no relationship between objectivity and subjectivity (Neuert, 1987).

This result is further supported by the additional correlation analysis based on a random procedure. The correlation coefficient between PE and MOT provides an r=0.016, which corresponds to an R^2 of 0.0003. The outcome is also non-significant (Neuert, 1987).

In addition, we also tested whether the actual time lag between the conducted decision making task and the ex-post evaluation of the decision making outcomes has an impact on the degree of ex-post rationalisation. Therefore, we classified the sample of the field experimental study into sub-groups. The first sub-group represented a "more recent" time lag of less than six months, the second one a time lag of more than six months. The findings are as follows (Table 2):

TABLE 2
Mann-WHITNEY U TEST (Neuert, 1987)

	DM EE 1	***DM EE 2***	***DM EE 3***	***DM EE 4***	***DM EE 5***	***DM EE 6***	***DM EE 7***	***DM EE 8***	***DM SPE 1***	***DM SPE 2***	***DM SPE 3***
Mann-Whitney U	2147.000	2154.500	2297.000	2308.000	2226.500	2236.500	2114.000	2193.500	2142.000	1982.000	2184.000
Wilcoxon W	3687.000	5724.500	5867.000	5878.000	5796.500	5806.500	5684.000	3733.500	5712.000	5552.000	5754.000
Z	-.758	-.735	-.061	-.009	-.384	-.340	-.983	-.542	-.874	-1.625	-.583
Asy. Sig. (2-tailed)	.449	.462	.951	.992	.701	.734	.325	.588	.382	.104	.560
Test Statistics: Grouping Variable: Recalling information bias group											

The statistical procedure was based on a non-parametric Mann-Whitney U test. In both cases, the results showed no difference in the reported objective economic decision making outcomes between the more recent and the less recent sample (Woschank, 2017).

The same results apply for the subjective self-evaluation between the more recent and the less recent sample. These findings indicate the conjecture that the elapsed time between the occurrence of the decision making and the evaluation of the decision making outcomes does not matter, given a certain minimum time to learn about one´s performance and to reflect on it in order to maintain cognitive consistence (Woschank, 2017).

In general, it can be summarised that our basic hypotheses are tentatively corroborated by our empirical findings. Obviously, the "harmonisation" between the objective measures of decision making processes and the subjective evaluation and satisfaction with those processes, to a certain extent depends on the tendency of human beings to adjust their subjective sentiments to the objective real world status.

TENTATIVE CONCLUSIONS AND IMPLICATIONS

Our experimental findings suggest that decision making behaviour and decision making efficiency are closely related. It can be claimed that decision making rationality depends on situational, personal, emotional, ecological, attitudinal, etc. contexts.

As a major conclusion, we also assume that the often reported discrepancy between the objective outcomes of decision making processes and the subjective satisfaction and self-evaluation of decision making performance can be indeed empirically observed. The degree of discrepancy obviously depends on the situational fact, whether the individual decision makers do have the opportunity to assess their performance in light of the actual and objectively measureable results. If they can do so, objective outcomes and subjective evaluation get closer "together" than in situations where the individual decision makers are either unaware of the objective results and/or cannot or do not deliberately analyse their personal contribution.

We have to concede that our theoretical framework, based on Festinger´s theory of cognitive consistence, so far only provides one possible explanatory outline. There may certainly additional and more refined theoretical approaches being ready to be developed and applied, i.e. Helson´s "adapation-level-theory" or Sherif and Hovland´s "assimilation-contrast-theory", among others (Homburg & Rudolph, 1997).

In addition, the question will have to be discussed, whether the so far utilised empirical methods of ex-post-facto field experiments and laboratory experiments are indeed appropriate to investigate the relevant cause-effect-relations in decision making processes, especially in view of recent findings in behavioural economics.

From our point of view, in a first step it would be necessary to consolidate the numerous and sometimes contradictory findings from behavioural economics, experimental economics, game theory, etc. into a more transparent general theory of socio-economic decision making behaviour and decision making efficiency. Secondly, it might be useful to further develop and refine the methodology and the research methods for decision making research beyond the most used research designs, perhaps towards creative mixed methods approaches, also in the context of big data analyses.

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